U.S. Department of Energy
Compliance Strategy
for E.O. 13149

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Executive Summary

Executive Order (E.O.) 13149, G*reening the Government through Federal Fleet and Transportation Efficiency, wa*s signed by the President on April 21, 2000. The order requires Federal agencies to reduce their vehicle petroleum consumption by 20 percent, relative to their FY 1999 baseline, through the use of alternative fuel in alternative fuel vehicles and improvements in fleet fuel efficiency.

One of the requirements of E.O. 13149 is for each agency to develop a comprehensive strategy that illustrates how it will achieve the petroleum reduction goals. For the Department of Energy, the Office of Energy Efficiency and Renewable Energy was given lead responsibility for developing this compliance strategy. The office's efforts were coordinated with individual Department of Energy fleet managers to gain operational input and commitment to the strategy, which were viewed as key to its future success. The strategy also responds to other Departmental program initiatives having related petroleum reduction goals, such as the Energy Policy Act and the Secretary's Pollution Prevention and Energy Efficiency Leadership Goals. Through discussions with and input from the key managers of these programs, the strategy ensures fleet compliance with the goals of the Energy Policy Act of 1992 and the Secretary's Pollution Prevention and Energy Efficiency Leadership Goals, while at the same time meeting the requirements and objectives of the Executive Order.

The specific elements of the strategy include the use of biodiesel in vehicles with diesel engines, the use of other alternative fuels, the acquisition of light-duty vehicles with higher fuel economy, and improvements in the overall efficiency of fleet vehicle operations. The approach taken in developing this strategy is consistent with the general guidance of *The Federal Fleet Strategy Development Supplement*[1]. It entailed a review of the Department of Energy's fleet composition and characteristics, identification of favorable individual fleet locations, and a "roll-up" of each individual location's strategy to form an overall agency-wide strategy that meets the goals of E.O. 13149.

Table 1 summarizes the estimated petroleum use reduction that will be achieved by each element of the Department's compliance strategy. The quantities in the table are given in gasoline gallon equivalents. Specific details on how each of these reductions will be achieved are provided in Section I-4 of this strategy. As shown in Table 1, in fiscal year 2005 it is expected that the implementation of the strategy will achieve as much as 34 percent reduction in the agency's on-road vehicle petroleum consumption by end of fiscal year 2005, which exceeds the 20 percent reduction goal of E.O. 13149.

[1] U.S. Department of Energy, Office of Technology Utilization, *The Federal Fleet Strategy Development Supplement*, September 2000.

Table 1. Planned FY 2005 Petroleum Reduction by Strategic Approach

Reduction by Strategic Approach			Planned Total Petroleum Reduction in FY 2005	
Use of Biodiesel (GGE)*	Use of Alternative Fuels (GGE)	Fuel Economy/ Fleet Efficiency Improvements (GGE)	Total GGE	% Reduction
473,745	1,222,511	276,977	**1,973,233**	**33.8**

** GGE = Gasoline Gallons Equivalent*

Fleet reporting, and tracking of compliance with the Department's strategy and the E.O. 13149 in general, will be performed using the new Web-based database system, the Federal Automotive Statistical Tool. The Department, in cooperation with the General Services Administration's Office of Government-Wide Policy, developed the system based on the Vehicle Information Data System reporting mechanism that the Department's fleets utilized in fiscal year 1999 to report their fuel consumption and alternative fuel vehicle activities. The new system is user-friendly and provides agency-wide roll-up features for effective management of fleet activities under E.O. 13149 and other programs. The system has been approved by the Field Management Council, and does not impose any new reporting requirements on Departmental fleets. Instead, it satisfies three Federal reporting requirements: E.O. 13149, the Energy Policy Act of 1992, and the General Services Administration's SF-82 Agency Report of Motor Vehicle Data.

The Department has also assessed the cost impacts of the agency's strategy on individual fleets. To offset the higher price of some types of alternative fuel vehicles compared to conventional vehicles, the Department of Energy established a "memorandum of understanding" with the General Services Administration that states that fleets that lease alternative fuel vehicles through the General Services Administration will pay the same monthly charge for alternative fuel vehicles as for leasing gasoline vehicles. The additional costs are recovered through a small monthly surcharge on all vehicles leased from the General Services Administration throughout the entire Department of Energy fleet. This means that all Departmental fleets that lease vehicles from the General Services Administration will share in the additional costs of alternative fuel vehicle acquisition rather than just the fleets using the vehicles. For vehicles leased from the General Services Administration, the monthly mileage fees cover the fuel costs and are the same regardless of vehicle fuel type. The Department is also working on securing funding (approximately $1.9 million) for covering the additional costs of installing on-site alternative fuel refueling stations at a number of the Department's fleet locations.

The Department of Energy's strategy is focused yet flexible, and has a high probability of success in achieving the required petroleum reduction goals. It is consistent with and supports the requirements of other Departmental programs aimed at achieving petroleum reductions, incorporates a Web-based tracking system for fleets, and addresses the cost impacts for individual fleets. It provides a compliance plan that is consistent with the needs of the agency's fleets and the requirements of individual fleet locations, while ensuring the Department provides

leadership among Federal agencies in reducing vehicle petroleum fuel consumption.

I. Data Collection and Analysis

To develop a strategy for the Department of Energy (DOE) to comply with the petroleum use reduction goal of Executive Order (E.O.) 13149, the agency first conducted an extensive data collection effort. Table 2 shows the types of data collected for each of the agency's fleets and the sources used. The data collected was then used to develop the baseline petroleum consumption, the baseline acquisitions' average fuel economy, and a realistic strategy for achieving the goals of E.O. 13149.

Table 2. Data Requirements

Data Requirement	Source
FY 1999 Petroleum Fuel Use (gallons) - Total , non-road, and exempt vehicle fuel use	SF-82 report FEMP report
Fleet Composition and Characteristics - FY 1999 inventory and new acquisitions (conventional and alternative fuel vehicles; light-, medium-, and heavy-duty; gasoline and diesel) - FY 1999 new acquisition model breakdown - FY2000 and FY2001 projected inventories and new acquisitions (conventional and alternative fuel vehicles; light-, medium-, and heavy-duty; gasoline and diesel) - Number of exempt (security, military, etc.) vehicles purchased in FY1999 and their annual fuel consumption	SF-82 report FEMP report GSA Automotive Division GSA Fleet Division GSA Keeling Report, www.policyworks.gov/org/main/mt/homepage/mtv/KEELINGREPORT/MAINREPORT.htm Fleet manager interviews
Combined Fuel Economy Ratings by Light Duty Vehicle Category (subcompact, compact, etc.)	DOE/EPA Fleet Fuel Economy Guide, MY 1999

I-1. DOE Baseline Petroleum Fuel Use

The DOE-wide fleet use of gasoline and diesel fuel was determined for fiscal year (FY) 1999, for both covered and non-covered vehicles.

A summary of the DOE-wide fuel use in FY 1999 is provided in Table 3. For FY 1999, the DOE fleet used about 7.3 million gasoline gallons equivalent (GGE) of petroleum fuel nationwide, with slightly more than half of this (on both a gallon and GGE basis) made up of gasoline. This data was based upon the Annual Report to Congress on Federal Government Energy Management and Conservation Programs for FY 1999, submitted by the Department of Energy's Federal Energy Management Program (FEMP) and information provided to the General Services Administration (GSA) for the FY 1999 SF-82 report.

Table 3. DOE Fleetwide Petroleum Fuel Usage for FY 1999

Fuel Type	Total DOE Petroleum Usage, FY 1999 (Gallons)	GGE Conversion Factor	Total DOE Petroleum Usage, FY 1999 (GGE)
Gasoline	3,916,200	1.0	3,916,200
Diesel Fuel	3,014,000	1.147	3,457,058
Total Petroleum Used			7,373,258

The non-road and exempt vehicle fuel use was subtracted from the total fuel use figures to establish the Agency's baseline. This fuel use baseline was then multiplied by 20 percent to determine the required reduction goal. Based on this process, DOE's overall compliance strategy must achieve a total of about 1.2 million GGE savings by FY 2005 when compared with FY 1999 fuel consumption figures, as shown in Table 4.

Table 4. FY 1999 Fuel Use Breakdown for DOE

Total DOE Fleet-wide Petroleum Use (GGE)	DOE Non-road Petroleum Use (GGE)	DOE Exempt Petroleum Use (GGE)	DOE Total Covered Petroleum Use (GGE)	Baseline DOE Petroleum 20% Reduction Goal (GGE)
7,373,258	1,087,099	452,146	5,834,002	**1,166,800**

I-2. DOE Fleet Characteristics

The DOE fleet is located in more than fifty individual sites across the country, including program and operational offices. Fleet sizes at these locations range from several thousand to less than a dozen. Because of this complexity in the DOE fleet structure, the decision was made to develop a compliance strategy based on parameters of individual fleet locations rather than on an agency-wide basis.

To achieve the greatest impact from the location-based strategy, the primary focus was placed on sixteen locations having larger DOE fleet vehicles concentrations, with corresponding higher fuel consumption and the potential for more attractive economics associated with refueling infrastructure and vehicle maintenance support for alternative fuel vehicles (AFVs). In 1999, the sixteen fleets were responsible for over 80 percent of the vehicle purchases and over 90 percent of the petroleum consumption of the total DOE fleet. These fleets were selected for implementing the strategy. Table 5 summarizes the data on petroleum use and fleet inventory collected from these sixteen fleets. Note that the majority of light duty vehicles operated by these fleets are leased through GSA.

Table 5. Selected Fleet Locations for DOE-Wide Strategy

DOE Fleet Location	FY1999 Total Petroleum Use (GGE)	FY1999 Covered Petroleum Use (GGE) *	FY 1999 Fleet Inventory			Percent LDV GSA-Leased
			LDV**	MDV**	HDV**	
BPA-Willamette	193,596	193,596	400	464	176	100
Brookhaven National Laboratory	157,280	129,179	244	41	3	0
Fermi National Accelerator Laboratory	144,851	144,851	133	81	16	25
Idaho National Engineering and Environmental Laboratory	1,062,272	1,022,714	698	15	249	0
Lawrence Berkeley National Laboratory	111,682	110,584	191	56	39	100
Lawrence Livermore National Laboratory	506,337	462,255	808	51	54	100
Los Alamos National Laboratory	711,244	432,874	591	468	101	100
National Renewable Energy Laboratory	16,926	15,462	36	12	0	100
NETL-Morgantown	4,786	4,477	15	4	1	100
NETL-Pittsburgh	11,421	9,876	42	7	4	90
Nevada Test Site	1,708,950	1,289,307	1,040	170	257	100
Oak Ridge National Laboratory	667,132	420,293	1,741	220	216	25
Pantex	321,370	244,242	271	7	16	100
Richland-Hanford Site	631,286	593,413	551	823	---	100
SNL-Kirtland	330,000	312,000	413	320	30	100
Savannah River Site	711,951	366,706	1,472	---	87	100
Total for Target Fleets	7,291,083	5,751,828	8,646	2,739	1,249	---

* Covered = Total - Nonroad - Exempt

** LDV= light-duty vehicles; MDV= medium-duty vehicles; HDV= heavy-duty vehicles

The remaining DOE fleet locations not identified in the strategy will be encouraged to reduce their petroleum use by amounts stated in the Executive Order, and will participate in the acquisition of higher fuel economy vehicles and AFVs. In addition, all DOE fleet locations will be required to meet the objectives of other internal or external fuel and energy reduction initiatives. One such initiative is the Pollution Prevention and Energy Efficiency (P2/E2) Leadership Goals effort established by the Secretary in November 1999. The DOE P2/E2 Program established three goals related to transportation:

1. Reduce the annual petroleum consumption of the overall DOE fleet by at least 20 percent by 2005 in comparison to 1999, including improving the fuel economy of new light duty vehicle acquisitions, and by other means.
2. At least 75 percent of new light duty vehicle acquisitions are to be alternative fuel vehicles, in accordance with the requirements of the Energy Policy Act of 1992 (EPAct).
3. Increase the usage rate of alternative fuel in DOE alternative fuel vehicles to 75 percent by 2005, and 90 percent by 2010, in areas where alternative fuel infrastructure is available.

This DOE strategy for compliance with E.O. 13149 is consistent with attaining each of these P2/E2 goals.

I-3. Basic Assumptions

A variety of assumptions were made in developing the DOE strategy, including the following:

- Biodiesel and E85 (a blend of 85 percent ethanol, 15 percent gasoline) fuel supplies are generally available or would become available in the near-term. Natural gas and electricity supplies are assumed to be currently available at each fleet location, unless otherwise known from discussions with fleet managers.
- Projected vehicle acquisition rates for FY 2001 are assumed to remain stable through FY 2005.
- Projected AFV acquisition rates for FY 2001 through FY 2005 are assumed to be 75 percent of new vehicle acquisitions for all fleet locations.
- The mix (among types of fuels) of future AFV acquisitions is based on interviews with individual fleet managers, as well as fleet AFV acquisitions for FY 1999 and FY 2000, and projections for FY 2001.
- Light duty vehicle turnover in DOE fleet locations is assumed to be five years, on average.
- Activities will be undertaken to ensure new AFVs use alternative fuel 75 percent and conventional fuel 25 percent of the time on an average annual basis.
- AFV refueling is assumed to follow an availability hierarchy: 1) using an existing on-site station, 2) using an existing public station, 3) constructing a new on-site station.

I-4. Compliance Approach Analysis

Previous DOE analyses indicated that simply purchasing AFVs and using biodiesel at current rates within the DOE fleet would not result in the required 20 percent reduction in petroleum use by FY 2005. Therefore, a more comprehensive strategy was developed for reaching the 20 percent reduction goal.

It was decided that the DOE compliance strategy would consist of four core elements:

(1) Biodiesel Blend (B20) Use
(2) AFV Acquisitions and Alternative Fuel Use
(3) Acquisition of Higher Fuel Economy Vehicles
(4) Fleet Efficiency Improvements.

These options were chosen for their significant potential for petroleum fuel savings for the DOE fleet. An analysis was performed for each element to determine its potential for reducing petroleum fuel use in the sixteen DOE fleets. Brief discussions of each of the four elements and their application in the strategy follow. (Each discussion begins with a table showing that element's contribution to the overall strategy.)

(1) Biodiesel Blend Use

Table 6. Summary of B20 Use in DOE Strategy

Total DOE Covered Fuel Use in FY 99 (GGE)	20% Fuel Reduction Goal (GGE)	Strategy Element 1: B20 Fuel Savings (GGE)	Percent of Agency Fuel Reduction Goal
5,834,002	1,166,800	473,745	40.6

Discussion of B20

As the first element of DOE's strategy, B20 (a blend of 80 percent petroleum diesel with 20 percent biodiesel) fuel is proposed to be used in place of conventional diesel fuel at the sixteen fleet locations for both vehicular and non-road diesel equipment. This B20 strategy is estimated to result in an 18 percent GGE savings in annual diesel fuel usage at each fleet location, because every gallon of B20 used displaces about 18 percent of conventional diesel fuel when adjusted for energy content. In terms of DOE's overall fuel reduction goal, the use of B20 at the targeted fleet locations achieves about 40.6 percent of the total goal.

Estimated Cost Impacts of B20. Since B20 can be used in any diesel-powered engine with no engine modifications or costs, both on-road and non-road vehicles and equipment can be operated on B20. B20 can also be stored in existing diesel storage tanks without significant modification or cost. For fleet locations without existing on-site diesel storage and dispensing systems, such systems would have to be installed or existing diesel tanks switched to biodiesel storage. B20 does cost slightly more per gallon (about $0.20 more per gallon on average) than conventional diesel fuel. However, no additional cost will be incurred for GSA-leased vehicles since under the GSA contracts, DOE fleets will pay the same for B20 fuel as for conventional diesel fuel. GSA may not under current fuel reimbursement agreements, established between the local GSA office and the DOE facility, reimburse the full cost of B20 to fleet. The facility will need to implement a plan to successfully renegotiate the fuel cost issue with the local GSA office.

(2) AFV Acquisitions and Alternative Fuel Use

Table 7. Summary of AFV Fuel Savings

Total DOE Covered Fuel Use in FY 99 (GGE)	20% Fuel Reduction Goal (GGE)	Strategy Element 2: AFV Fuel Savings (GGE)	Percent of Agency Fuel Reduction Goal
5,834,002	1,166,800	1,222,511	105*

**This element alone exceeds the E.O. stated 20% goal*

Discussion of AFV Acquisitions and Alternative Fuel Use

AFV Acquisitions. Future AFV acquisitions for each fleet location were first estimated. Agency-wide AFV acquisition rates for FY 2001 and later was set at 75 percent of total new vehicle acquisitions. This provides an aggressive AFV introduction rate through FY 2005 for the strategy. For those fleet locations covered by EPAct (eight of the sixteen are EPAct-covered fleets), the 75 percent AFV acquisition rate is compliant with EPAct requirements.

Estimated Cost Impacts of AFV Acquisitions. The incremental costs of AFVs range from zero to several thousand dollars, depending on the AFV type. However, a new DOE program, called the Fleet Surcharge Program, will help offset the incremental costs of future AFV acquisitions under this DOE strategy when vehicles are leased from the General Services Administration (GSA). The Fleet Surcharge Program, approved by the Deputy Secretary and instituted under an interagency agreement with the General Services Administration (GSA), will place a small surcharge on each DOE fleet vehicle leased from GSA beginning in FY 2001. This is critical since the majority of vehicles operated by DOE fleets are GSA-leased. The surcharge applies to all DOE fleet locations, not just those included in this strategy. In this way, all DOE fleets will share the cost burden of acquiring AFVs for the DOE fleet. The surcharge will be part of the overall monthly lease cost of the vehicles. Surcharge funds will be placed in a separate account for paying the incremental cost of AFVs acquired in FY 2001 and in the years to follow. Those fleets leasing AFVs will pay the same lease price as for conventional gasoline vehicles.

Alternative Fuel Use. While individual DOE fleets are encouraged to purchase dedicated vehicles, bi-fuel and flexible fuel vehicles will also be acceptable. However, the strategy requires that, on average, new AFVs use the alternative fuel for at least 75 percent of the time, consistent with the Department's internal P2/E2 goals. Therefore, DOE fleets can purchase a mix of dedicated, bi-fuel, and flexible fuel vehicles as long as this AFV mix uses at least 75 percent alternative fuel annually. DOE fleet managers will be held responsible for meeting and maintaining the 75 percent alternative fuel use requirement by their AFV fleets.

AFV fleet fuel consumption in FY 2005 was calculated by first estimating the numbers of AFVs in service. Since a five-year light duty vehicle turnover is assumed, only those AFVs acquired in FY 2001 through FY 2005 would still be in service in FY 2005. The amount of petroleum fuel displaced by the AFVs was estimated by multiplying the numbers of AFVs by the annual per vehicle fuel consumption rate of the light duty gasoline vehicles being displaced and multiplied by 75 percent. In general, the annual per vehicle fuel consumption rate was calculated from the fleet's FY 1999 gasoline usage and numbers of light duty gasoline vehicles. For some fleets, this meant first subtracting out estimated gasoline usage by medium and heavy-duty vehicles. An example for the Lawrence Livermore fleet follows:

Fleet Gasoline Usage in FY 1999 = 441,113 GGE
Number of Light Duty Gasoline Vehicles in FY 1999 = 829
Average Annual Light Duty Gasoline Vehicle Fuel Rate = 441,113/829 = 532 GGE/Vehicle
Projected Numbers of New AFVs in Service in FY 2005 = 415
Percentage of Alternative Fuel Use by AFVs = 75%
Total Petroleum Fuel Displaced by AFVs in FY 2005 = ***415*532*0.75 = 165,585 GGE***

As summarized in table 7 above, a total of 1,222,511 GGE are saved with this approach, which is five percent higher than the overall fuel reduction goal of 1,166,800 GGE.

Estimated Cost Impacts of Alternative Fuel Use. Recent national average retail cost figures for E85, liquefied petroleum gasoline (LPG), and compressed natural gas (CNG) are $1.99/GGE, $1.62/GGE and $0.89/GGE, respectively. Electricity on average nationally is about $0.03 to 0.07/kw-hr which equates to about 1 to 2 cents/mile. However, for vehicles leased through GSA, the monthly mileage fees charged by GSA cover the fuel costs and are the same regardless of vehicle fuel type. Therefore, any higher costs or savings from use of alternative fuel are borne by GSA and not by the fleet leasing the AFV.

AFV refueling infrastructure. The use of alternative fuel vehicles is the most effective means of reducing petroleum fuel use if they are operated on alternative fuels. Therefore, key factors in assigning particular types of AFVs to specific fleet locations will be the availability of on-site or public AFV refueling stations, and a commitment by vehicle operators to using alternative fuels a substantial part of the time in these vehicles. If alternative fuels are not available, provisions must be made for installing AFV refueling equipment. Because of the additional costs associated with using AFVs compared with conventional vehicles, careful consideration will be given for placing these vehicles in appropriate fleets.

Infrastructure requirements were assessed for serving the projected AFV populations at each fleet location. If an AFV refueling station already exists on-site at the fleet location, the future AFVs should refuel using that station. If an on-site station does not exist, but a public station is available, the projected AFVs should use the public station. And if neither an on-site nor a public station is available for a fleet location, a new AFV refueling station will be needed for this location, with the preference on a privately owned station as opposed to government owned. The status of on-site and public refueling stations was determined through fleet interviews and through the use of the DOE's Alternative Fuel Data Center's AFV refueling locator (www.afdc.doe.gov).

Estimated Cost Impacts of AFV Refueling Infrastructure. The projected costs of the new on-site stations were obtained from individual fleet managers for planned installations, or estimated based on installation costs reported in technical literature. Costs represent required installations for serving the projected AFV fleet populations for FY 2005. Table 8 provides an overall

summary of estimated AFV infrastructure costs for the DOE fleet. Total AFV fleet refueling infrastructure costs were estimated at about $ 2.7 million. It should be noted that $850,000 of these costs are already funded through a government/industry cost-shared project under the DOE's AFV USER Program. The DOE Office of Energy Efficiency and Renewable Energy (EERE) has identified funds in expired interagency agreements that will be de-obligated to cover the remaining infrastructure costs.

Some DOE fleets have been successful at negotiating the installation of an AFV refueling station with a local fuel provider at minimal extra cost to the fleet. The fleets simply agreed to purchase a specific volume of alternative fuel from the station annually at an agreed fuel price. Also, ensuring that other Federal and non-Federal fleets in the area with AFVs commit to using the station will prevent any shortfalls of the agreed upon fuel use volume over the period of the contract. One such fleet is Los Alamos National Laboratory, which recently had a local E85 fuel provider install a refueling station near the site at no cost to DOE.

Table 8. Projected AFV Refueling Infrastructure Costs

DOE Fleet Location	Available On-Site or Public AFV Refueling?	AFV Refueling Infrastructure Costs ($)		
		E85	CNG	Electric
BPA-Willamette	No	35,000	200,000	---
Brookhaven National Laboratory	No	---	480,000	---
Fermilab	Yes (CNG)	75,000	---	---
Idaho National Engineering and Environmental Laboratory	Yes (LCNG)	---	---	---
Lawrence Berkeley National Laboratory	Yes (CNG)	35,000	---	110,000
Lawrence Livermore National Laboratory (LLNL)	Yes (CNG)*	50,000	850,000**	---
Los Alamos National Laboratory	Yes (CNG, E85, Elect)	---	---	---
National Renewable Energy Laboratory	Yes (CNG, E85, Elect)	---	---	---
NETL-Morgantown	Yes (CNG slow)	---	125,000	---
NETL-Pittsburgh	Yes (CNG slow)	---	125,000	---
Nevada Test Site (NTS)	Yes (CNG)***	50,000	500,000	---
Oak Ridge National Laboratory	Yes (CNG)	50,000	---	---
Pantex	Yes (CNG)	50,000	---	---
Richland-Hanford Site	No	35,000	---	---
SNL-Kirtland	Yes (E85 & CNG)	---	---	---
Savannah River Site	Yes (E85)	---	---	---
Totals	---	$355,000	$2,280,000	$110,000

* The existing CNG station at LLNL is a slow-fill station that no longer meets the needs of the fleet and is being replaced with a fast-fill station.
** LLNL has already received funding under the DOE AFV USER Program to partially cover the costs of this station and the remaining costs are being borne by the fuel/station provider.
***A CNG public station is available in Las Vegas for the smaller portion of the NTS fleet, however infrastructure is needed at the test site to support the majority of the NTS fleet.

(3) Acquisition of Higher Fuel Economy Vehicles

Table 9. Summary of Higher Fuel Economy Savings

Total DOE Covered Fuel Use in FY 99 (GGE)	20% Fuel Reduction Goal (GGE)	Strategy Element 3: Higher FE Fuel Savings (GGE)	Percent of Agency Fuel Reduction Goal
5,834,002	1,166,800	50,352	4.3

Discussion of Higher Fuel Economy

Fuel savings due to increases in the new fleet vehicle average fuel economy were estimated based on the projected numbers of petroleum-fueled light duty vehicle purchases over the period of FY 2001 through FY 2005, and the annual per vehicle fuel consumption rates of these vehicles. Due to the importance of this strategy element, and to achieving some equity among DOE fleets in sharing the burden of this compliance strategy, it is planned that all DOE fleet locations will be required to meet the higher fuel economy schedule, not just the sixteen targeted locations.

It is anticipated that the DOE fleet would meet the increased average fuel economies of 1.0 mpg by FY 2002 and 3.0 mpg by FY 2005 compared with the FY 1999 baseline by pursuing the following schedule for fleet fuel economy increases in new acquisitions between 2001 and 2005:

- *0.5 mpg increase in FY 2001*
- *1.0 mpg increase in FY 2002*
- *2.0 mpg increase in FY 2003*
- *2.5 mpg increase in FY 2004*
- *3.0 mpg increase in FY 2005*

For ***each*** DOE fleet location (since all fleets will participate in this element), FY 1999 baseline average fleet fuel economies were calculated for the vehicle types acquired in that year. For some fleet locations, the baseline fuel economies were calculated from the actual new model acquisitions in FY 1999 and the *Department of Energy/Environmental Protection Agency's Fleet Fuel Economy Guide*. For most fleet locations, however, data was only available for vehicle class and size, not models. As a result, baseline fuel economies were estimated for these vehicles. These estimates were derived by first placing the light duty vehicle acquisitions into size categories, then obtaining the average fuel economies for those categories from the *Department of Energy/Environmental Protection Agency's Fleet Fuel Economy Guide*. In all cases, fleet average fuel economies were calculated using the harmonic averaging method, as described in DOE's guidance document for Federal agencies on E.O. 13149[2].

[2] *Executive Order 13149: Greening the Government through Federal Fleet and Transportation Efficiency, guidance Document for Federal Agencies*, prepared by U.S. Department of Energy, Office of Technology Utilization, July 2000.

It is anticipated that the schedule for achieving the required fuel economy increase from 2001 through 2005 would be met by individual fleets acquiring vehicles with smaller engines and two-wheel versus four-wheel drives, as well as gasoline hybrid vehicles. However, it will be left to the individual fleets to decide the best means of achieving the fuel economy increases through their annual vehicle acquisition plans.

Table 10 presents data from the Lawrence Livermore fleet to derive the fuel savings achieved at this location by acquiring higher fuel economy vehicles. In this example, the annual per vehicle fuel consumption rates for the new light duty vehicles were calculated from the original per vehicle fuel consumption rate for FY 1999 (532 GGE for Lawrence Livermore), the increased fleet average fuel economy for the given fiscal year (e.g., 18.4 mpg in FY 2001), and the original FY 1999 fleet average fuel economy (17.9 mpg), as follows:

*Annual GGE for New LDV in FY 2001 = 532*17.9/18.4 = 518 GGE*

As provided in Table 9, fuel savings associated with higher fuel economy vehicles are estimated to be 50,352 GGE, which equates to about 4.3 percent of the required DOE fuel reduction goal.

Table 10. The Acquisition of Higher Fuel Economy Vehicles at Lawrence Livermore

	FY2001	FY2002	FY2003	FY2004	FY 2005
New LDVs	27	27	27	27	27
Annual GGE/New LDV	518	504	479	467	456
Fuel Usage for New LDVs (GGE)	13,976	13,606	12,921	12,604	12,303
Fuel Usage for FY 1999 LDVs at 532GGE/LDV (GGE)	14,364	14,364	14,364	14,364	14,364
Fuel Saved (GGE) for New LDVs	388	758	1,443	1,760	2,061
Total Fuel Saved in FY2005 (GGE)					**6,410**

Estimated Cost Impacts of Higher Fuel Economy. The acquisition of conventional high fuel economy vehicles should provide no additional cost impact to DOE fleets. In fact, higher fuel economy vehicles tend to be smaller vehicles with smaller displacement engines whose capital or lease costs are lower than vehicles with lower fuel economies. In addition, the fuel savings realized by fleets due to higher fuel economy vehicle use would result in lower fleet fuel costs.

(4) Fleet Efficiency Improvements

Table 11. Summary of Fleet Efficiency Fuel Savings

Total DOE Covered Fuel Use in FY 99 (GGE)	20% Fuel Reduction Goal (GGE)	Strategy Element 4: Fleet Efficiency Fuel Savings (GGE)	Percent of Agency Fuel Reduction Goal
5,834,002	1,166,800	226,626	19.4

Discussion of Fleet Efficiency Improvements

The strategy requires that each fleet location establish a fleet efficiency improvement plan that achieves a minimum 2 percent reduction in overall fleet petroleum fuel consumption relative to the baseline. For a small number of DOE fleets which have low petroleum reductions for the first three elements of the strategy, a minimum 10 to 15 percent reduction resulting from fleet efficiency improvements is suggested in order to achieve higher overall fuel reductions for those locations. A fleet can also exceed the specific goals of the first three strategy elements, in lieu of meeting its fleet efficiency goals, as long as the same overall fuel reduction required by the DOE strategy is achieved.

The DOE strategy does not stipulate which types of efficiency improvement techniques must be instituted by individual fleets. Each fleet manager will assess his or her fleet's efficiency in accomplishing its mission. Using compact sedans in preference to large sedans, rescheduling or combining routes to increase vehicle passenger capacities, and decreasing vehicle trips per day should all be considered in achieving a reduction in petroleum use. An added benefit of these improvements could be increased personnel productivity.

The projected DOE-wide fleet efficiency improvements resulted in 226,626 GGE of fuel savings. This is equal to about 19.4 percent of the total fuel reduction goal of 1,166,800 GGE, as indicated in Table 11.

Estimated Cost Impacts of Fleet Efficiency Improvements. The implementation of fleet efficiency improvements among DOE's fleets should provide a positive cost impact for their operations. The resulting reductions in fleet fuel use, potential reductions in vehicle maintenance, and increases in personnel productivity should all serve to reduce overall fleet operational costs.

II. AFV Training Program

Given the importance of AFV acquisition and utilization to the DOE compliance strategy, AFV training for fleet personnel will be a key component to its success. Through an orchestrated training program, fleet personnel can become familiar with AFV technology and operation, safety issues, and proper refueling procedures. Most alternative fuel providers offer this type of training as part of an

initial fuel purchase contract or refueling station installation. DOE EERE will assist fleets in negotiating AFV training as part of these contracts for their facilities.

III. Fleet Management Issues

E.O. 13149 requires that Federal agencies ensure that all government-owned and government-operated vehicles, as well as contractor-operated vehicles under its jurisdiction, comply with goals and objectives of the executive order. This means that contractors must be made aware of and commit to the requirements of E.O. 13149 and this compliance strategy. DOE managers will need to modify contracts with contractors that operate vehicles to ensure compliance under this strategy. DOE's Office of Management and Administration will soon issue guidance to DOE fleets on this issue.

The Department recognizes certain environmental issues that are addressed by E.O. 13149, as well as the earlier E.O. 13101 on "Greening the Government." These Executive Orders require the use of re-refined lubricating oils, with API certification meeting manufacturer's performance standards, in Federal and contractor vehicles, as well as the use of retread tires and tires with recycled content when they are reasonably available and meet performance standards. As directed in the memorandum from Stephen J. Michelsen, Director of the Office of Resource Management, on April 18, 2001, DOE fleet shall use re-refined oil as outlined in these orders. DOE also encourages the use of bio-based products as part of its compliance strategy.

IV. Results of DOE Strategy

The results expected from implementing the DOE strategy are provided in Table 12. (The analyses of individual fleet locations for developing the strategy results are provided as the Attachments to this document.) Estimated fuel savings are shown for each DOE fleet location. Under this strategy, the largest petroleum use reductions will be achieved through the acquisition of AFVs and use of alternative fuel. The fleet location projected to have the largest total fleet petroleum reduction is the Nevada Test Site, with savings of about 532,900 GGE. All of the targeted fleets are projected to reduce their fleet fuel usage by more than the 20 percent goal. Overall, the strategy's DOE-wide fleet fuel reduction of about 2.0 million GGE is equal to about a 34 percent decrease relative to the FY 1999 covered fuel baseline, well in excess of the 20 percent goal.

In addition, the DOE strategy achieves both performance measures established by E.O. 13149. The order requires the use of alternative fuels in AFVs the majority (greater than 50 percent) of the time, and requires the purchase of higher fuel economy petroleum fueled vehicles to achieve the 1.0 mpg increase in fleet average fuel economy by FY 2002, and the 3.0 mpg increase by FY 2005.

V. Strategy Compliance Evaluation

DOE's Office of Energy Efficiency and Renewable Energy (EERE), in conjunction with GSA's Office of Government-wide Policy, has recently developed a Web-based reporting tool, called the Federal Automotive Statistical Tool (FAST) for evaluating E.O. 13149 compliance. FAST was based on the Vehicle Information Data System, or VIDS, which DOE fleets became familiar with during FY1999. Many of the data input screens of FAST are identical to those used in VIDS. The Field Management Council has approved the use of the FAST system to collect data from Departmental fleets. FAST can be accessed at the following website:

http://fastweb.inel.gov

The FAST system does not impose any new reporting requirements on DOE fleets. Instead, it satisfies three Federal reporting requirements: E.O. 13149, EPACT, and GSA's SF-82 Agency Report of Motor Vehicle Data. This ability for fleets to report data for all three programs under FAST should greatly streamline the reporting process. FAST will also provide a unique management tool for fleet managers for characterizing and assessing fleet activities. Compliance with this strategy will be reviewed each year through the use of FAST, and adjustments will be made as necessary to keep pace with evolving DOE fleet requirements. Compliance with using re-refined oil and retread tires will be evaluated based on sites' annual RCRA/E.O. 13101 reports.

VI. Recognition and Awards

As part of its strategy, special recognition or awards will be given for DOE personnel and/or fleets that exceed the strategy's requirements or exhibit particularly noteworthy leadership in attaining its objectives and the goals of the Executive Order. The nature of this recognition has not yet been determined, but it will likely be similar to the GSA EPACT Award that provides $2,000 (after tax) to each of two awardees each year. A ceremony will be held at DOE headquarters, potentially in October in conjunction with DOE's P2/E2 awards, to recognize the awardees. It is anticipated that representatives of the Secretary's Office will present the awards.

Table 12. DOE Compliance Strategy Results

PSO	Targeted DOE Location	FY 1999 Fleet Fuel Use				Baseline LDV FE (mpg)	FY 1999 Fleet Inventory				Required On-site AFV Infra Costs	DOE Strategy Fuel Savings in FY 2005 (GGE)			Total FY 2005 Savings	
		Total Fuel Use (GGE)	Non-Road Fuel use (GGE)	Exempt Fuel Use (GGE)	Total Covered Fuel Use (GGE)		LDV	M/HDV	AFV	Exempt Vehicles		Biodiesel	AFV Use	Fuel Economy/ Fleet Efficiency Improvements	GGE	% Reduction
BPA	BPA-Willamette	193,596	-	-	193,596	16.7	400	640	41	0	$235,000	29,172	14,400	8,760	52,331	27.0
Defense Programs	Los Alamos	711,244	-	278,371	432,874	16.5	591	569	244	263	0	32,877	72,075	10,637	115,589	26.7
	Nevada Test Site	1,708,950	407,295	12,348	1,289,307	16.8	1,040	427	111	9	$550,000	105,085	385,875	41,929	532,889	41.3
	Pantex	321,370	77,128	-	244,242	16.8	271	23	63	0	$50,000	20,165	98,280	9,282	127,727	52.3
	SNL-Kirtland	330,000	-	18,000	312,000	16.5	413	350	84	24	0	11,394	71,160	9,389	91,943	29.5
	Lawrence Livermore	506,337	-	44,082	462,255	17.9	808	105	121	30	$900,000	11,780	165,585	15,655	193,020	41.8
Energy Efficiency	NREL	16,926	-	1,464	15,462	-	36	12	14	2	0	149	13,451	309	13,909	90.0
Environmental Management	Idaho Eng. & Environ. Site	1,062,272	-	39,558	1,022,714	16.4	698	264	125	57	0	119,991	67,665	23,466	211,102	20.6
	Richland-Hanford Site	631,286	-	37,873	593,413	16.4	551	823	84	92	$35,000	24,337	12,420	89,414	126,172	21.3
	Savannah River Site	711,951	336,071	9,174	366,706	16.0	1,472	87	284	33	0	68,982	161,588	14,338	244,908	66.8
Fossil Energy	NETL-Morgantown	4,786	-	309	4,477	20.2	15	5	4	1	$125,000	27	2,781	213	3,022	67.5
	NETL-Pittsburgh	11,421	-	1,545	9,876	18.8	42	11	14	4	$125,000	109	4,635	330	5,074	51.4
Office of Science	Brookhaven	157,280	19,766	8,335	129,179	17.5	244	44	9	38	$480,000	3,570	22,106	3,488	29,164	22.6
	Fermilab	144,851	-	-	144,851	-	133	97	19	0	$50,000	6,477	71,700	2,897	81,074	56.0
	Lawrence Berkeley	111,682	-	1,098	110,584	21.2	191	95	4	3	$145,000	7,818	43,783	3,485	55,086	49.8
	Oak Ridge*	667,132	246,839	-**	420,293	17.3	1,741	436	14	216***	$50,000	31,811	15,008	42,583	89,401	21.3
Total from targeted fleets		7,291,083	1,087,099	452,156	5,751,828	16.7	8,646	3,988	1,235	772	$2,745,000	473,745	1,222,511	276,155	1,972,411	34.3
Totals from non-targeted fleets		82,175	-	-	82,175	-	-	-	-	-	0	-	-	822	822	1.0
Total DOE Fleetwide		7,373,258	1,087,099	452,146	**5,834,002**	16.83	-	-	-	-	$2,745,000	473,745	1,222,511	276,977	**1,973,233**	**33.8**
Required 20% Fuel Use Reduction					**1,166,800**											

* In addition to the Office of Science LPSO, some Oak Ridge National Laboratory operations fall under the Defense Programs and Environmental Management LPSOs.

** Exempt fuel use included under non-road fuel use

*** Exempt vehicles include non-road vehicles

Attachments
Individual DOE Fleet Location Analyses

BPA-WILLAMETTE

FUEL USE

	TOTAL1999		1999 NON-ROAD		1999 EXEMPT			2005 GOAL
	(GAL)	GGE	GAL	GGE	GAL	GGE	TOTAL GGE	GGE REDUCT
GASOL	32,074	32,074			0	0	32,074	
DIESEL	140,821	161,522					161,522	
TOTAL		193,596		-		-	193,596	38,719

FLEET DATA -VIDS

	1999			2000			2001		
	INVENTORY	NEW TOTAL	NEW AFV	INVENTORY	NEW TOTAL	NEW AFV	INVENTORY	NEW TOTAL	NEW AFV
LDV	400	55	34	153	36	6	139	32	2
MDV	464			464			464		
HDV	176			176			176		
AFV	41								

	GASOL	DIESEL	EXEMPT	
LDV	200	200	0	Assumed all LDV gasoline; all M/HDV diesel
MDV		464	0	
HDV		176	0	

FLEET FUEL ECONOMY (NEW ACQUISITIONS) - VIDS

Vehicle Type				1999	Fuel Economy Info			
Make	Model	Cylinders	Drive	Acquisitions	City FE	Hwy FE	Combined FE	
Ford	MINICOMPACT			0			0	0
Ford	SUBCOMPACT			0			0	0
	COMPACT				20.3	28.5	23	0
	MIDSIZE			1	19.7	29	23	0.043436023
	LARGE				18	25	21	0
	TWO-SEATER						0	0
	SMALL P/U			4	16.1	20.2	18	0.225754874
	LARGE P/U			12	14.3	19.1	16	0.744260975
	SMALL VAN			1	15.5	20.7	17	0.057223001
	LARGE VAN			3	14.2	19.1	16	0.186877811

Baseline Average FE	16.7
FY2002 FE Goal	17.7
FY2005 FE Goal	19.7

* Average fuel economy values estimated by category based on FY 1999 New GSA Leased Vehicles for DOE fleet and fleet fuel economy guide

STRATEGY

1. BIODIESEL USE

- Willamette has HDV fleet
- Assume diesel use remains constant through FY2005
- Assume total conversion to B20 by FY2005

FY 2005	FY2005	EQUIV FY2005	FY01	FY02	FY03	FY04	FY05
Diesel (gal)	B20 USE (gal)	FUEL DISPL (GGE)					
140,821	143,567	29,172	29,172	29,172	29,172	29,172	29,172

2. AFV ACQUISITIONS - VIDS

- AFV Refueling access (< 15 miles) = ???
- Willamette not in MSA
- Non-AFV acquisition rates assumed same as FY2001
- Afv acquisition rates assumed 75% for FY2001 thru Fy2005
- All acquisitions assumed to be LDV
- LDV turnover assumed to be five years
- Mix of AFVs based on 1999 purchased (50% CNG; 50% E85)
- Avg annual LDV fuel use = 32074/200 = 160 GGE
- Bi-fuel assumed to use CNG 75% of time; FFVs assumed 75% E85 use

	2000		2001		2002		2003		2004		2005	
	Total	AFV	Total	AFV	Total	AFV	Total	AFV	Total	AFV	Total	AFV
LDV	36	6	32	24	32	24	32	24	32	24	32	24
MDV												
HDV												

		Total AF Use	AFV Refueling					
Total AFVs in Service in FY2005		in FY 2005 (GGE)	Infra	FY01	FY02	FY03	FY04	FY05
CNG bi-fuel	60	7200	250000					
E85 FFV	60	7200	32500					
Total	120	14400		2880	5760	8640	11520	14400

3. Fuel Economy Increases

- Require gradually increasing FE consistent with FY02 and FY05 goals
  - FY01 = 0.5 mpg increase
  - FY02 = 1.0 mpg increase
  - FY03 = 2.0 mpg increase
  - FY04 =2.5 mpg increase
  - FY05 = 3.0 mpg increase
- Achieve increased FE through better selection of vehicle types, use of hybrids
- LDV turnover assumed to be five years
- Assume average new LDV in 1999 travels 2672 mi/yr based on 160 gal/yr and avg 16.7 mpg

	FY01	FY02	FY03	FY04	FY05
New LDV	8	8	8	8	8
gal/LDV	155	151	143	139	136
New gal used	1243	1208	1143	1113	1085
Gal saved in FY	893	928	993	1023	1051
Gal Saved Cum	893	1821	2814	3837	4888

Total gal saved in FY05 = 4888 GGE

4. Fleet Efficiency Improvements

- Reduced vehicle trips
- Increased vehicle loads
- More use of higher FE
- Assume overall two percent reduction in LDV fleet GGE from baseline

Covered Baseline GGE	Assumed 2% Savings (GGE)	FY01	FY02	FY03	FY04	FY05
193,596	3,872	774.38	1,548.77	2,323.15	3,097.53	3,871.91

OVERALL PETROL FUEL REDUCTIONS FOR BPA-WILLAMETTE STRATEGY

STRATEGY Element	FUEL SAVED (GGE)
1	29,172
2	14400
3	4888
4	3,872
TOTAL	52,331

BROOKHAVEN LAB

TOTAL FUEL USE

	1999 (GAL)	GGE	1999 NON-ROAD GAL	GGE	1999 EXEMPT GAL	GGE	TOTAL GGE	2005 GOAL GGE REDUCT
GASOL	137,514	137,514			8335	8335	129,179	
DIESEL	17,233	19,766	17,233	19,766			-	
TOTAL		157,280		19,766		8,335	129,179	25,836

FLEET DATA -VIDS

	1999 INVENTORY	NEW TOTAL	NEW AFV	2000 INVENTORY	NEW TOTAL	NEW AFV	2001 INVENTORY	NEW TOTAL	NEW AFV
LDV	244	21	9	240	20	5	238	9	9
MDV	41								
HDV	3								
EXEMPT	38								
AFV	9								

FLEET FUEL ECONOMY (NEW ACQUISITIONS)

Vehicle Type				1999	Fuel Economy Info			
Make	Model	Cylinders	Drive	Acquisitions	City FE	Hwy FE	Combined FE	
Ford	MINICOMPACT			0			26	0
Ford	SUBCOMPACT			0			33	0
	COMPACT				20.3	28.5	23	0
	MIDSIZE				19.7	29	23	0
	LARGE			2	18	25	21	0.097111111
	TWO-SEATER						0	0
	SMALL P/U			6	16.1	20.2	18	0.33863231
	LARGE P/U				14.3	19.1	16	0
	SMALL VAN				15.5	20.7	17	0
	LARGE VAN			4	14.2	19.1	16	0.249170415
						Baseline Average FE		17.5
						FY2002 FE Goal		18.5
						FY2005 FE Goal		20.5

* Average fuel economy values estimated by category based on FY 1999 New GSA Leased Vehicles for DOE fleet and fleet fuel economy guide

STRATEGY

1. BIODIESEL USE

- Brookhaven has MDV & HDV fleet
- Assume diesel use remains constant through FY2005
- Assume total conversion to B20 by FY2005

FY2005 Diesel (gal)	FY2005 B20 USE (gal)	EQUIV FY2005 FUEL DISPL (GGE)	FY01	FY02	FY03	FY04	FY05
17,233	17,569	3,570	3,570	3,570	3,570	3,570	3,570

2. AFV ACQUISITIONS

- AFV Refueling access (< 15 miles) = LPG (private)
- Brookhaven is in MSA
- Non-AFV acquisition rates assumed same as FY2000; AFV acquisition at 75% per EPACT
- All acquisitions assumed to be LDV
- LDV turnover assumed to be five years
- Mix of AFVs based on 1999 purchased (50% CNG; 50% E85) and interview with fleet mgr
- Assume MD/HDV 7.0 mpg avg and 6566 mi/yr avg (DOE Databook for Federal fleets)
- Assume average annual LDV mileage of 5,500 mi/yr based on FY00 FAST data; avg fuel economy of 14 mpg based on fleet derived estimate
- Avg annual LDV fuel use = 5,500/14 = 393 GGE
- Bi-fuel assumed to use CNG 75% of time; FFVs assumed 75% E85 use

	2000 Total	2000 AFV	2001 Total	2001 AFV	2002 Total	2002 AFV	2003 Total	2003 AFV	2004 Total	2004 AFV	2005 Total	2005 AFV
LDV	20	5	20	15	20	15	20	15	20	15	20	15
MDV												
HDV												

Total AFVs in Service in FY2005	Total AF Fuel Use (GGE) in FY2005	AFV Infra Cost ($)	FY01	FY02	FY03	FY04	FY05
CNG bi-fuel 75	22106	480000	Quote from Fleet Manager				
E85 FFV 0	0	0					
Total 75	22106	480000	4421	8842	13264	17685	22106

3. Fuel Economy Increases

- Require gradually increasing FE consistent with FY02 and FY05 goals
  - FY01 = 0.5 mpg increase
  - FY02 = 1.0 mpg increase
  - FY03 = 2.0 mpg increase
  - FY04 =2.5 mpg increase
  - FY05 = 3.0 mpg increase
- Achieve increased FE through better selection of vehicle types, use of hybrids
- LDV turnover assumed to be five years
- Assume average new LDV in 2000 travels 5,500 mi/yr with avg 17.5 mpg

	FY01	FY02	FY03	FY04	FY05
New LDV	5	5	5	5	5
gal/LDV	382	371	352	344	335
New gal used	1908	1857	1762	1718	1676
Gal saved in FY		57	108	203247289	
Gal Saved Cum		57	165	368	615	904

Total gal saved in FY05 = 904 GGE

4. Fleet Efficiency Improvements

- Reduced vehicle trips
- Increased vehicle loads
- More use of higher FE
- Assume overall two percent reduction in LDV fleet GGE from baseline

Covered Baseline GGE	Assumed 2% Savings (GGE)	FY01	FY02	FY03	FY04	FY05
129,179	2,584	516.72	1,033.43	1,550.15	2,066.86	2,583.58

OVERALL PETROL FUEL REDUCTIONS FOR BROOKHAVEN STRATEGY

STRATEGY OPTION	FUEL SAVED (GGE)
1	3,570
2	22106
3	904
4	2,584
TOTAL	29164

Fermilab

TOTAL FUEL USE

	1999		1999 NON-ROAD		1999 EXEMPT			2005 GOAL
	(GAL)	GGE	GAL	GGE	GAL	GGE	TOTAL GGE	GGE REDUCT
GASOL	108,989	108,989			0	0	108,989	
DIESEL	31,266	35,862					35,862	
TOTAL		144,851		-		-	144,851	28,970

FLEET DATA -VIDS

	1999			2000			2001		
	INVENTORY	NEW TOTAL	NEW AFV	INVENTORY	NEW TOTAL	NEW AFV	INVENTORY	NEW TOTAL	NEW AFV
LDV	133	9	9	125	24	24	125	26	26
MDV	81			81	9	9	81	9	9
HDV	16			16			16		
AFV	19								

	GASOL	DIESEL	EXEMPT
LDV	114	1	0
MDV	0	81	
HDV	0	16	

FLEET FUEL ECONOMY (NEW ACQUISITIONS) - VIDS

Vehicle Type				1999	Fuel Economy Info			
Make	Model	Cylinders	Drive	Acquisitions	City FE	Hwy FE	Combined FE	
Ford	MINICOMPACT			0			26	0
Ford	SUBCOMPACT			0			33	0
	COMPACT			0	20.3	28.5	23	0
	MIDSIZE			0	19.7	29	23	0
	LARGE			0	18	25	21	0
	TWO-SEATER			0			0	0
	SMALL P/U			0	16.1	20.2	18	0
	LARGE P/U			0	14.3	19.1	16	0
	SMALL VAN			0	15.5	20.7	17	0
	LARGE VAN			0	14.2	19.1	16	0

Baseline Average FE	-
FY2002 FE Goal	#VALUE!
FY2005 FE Goal	#VALUE!

* Average fuel economy values estimated by category based on FY 1999 New GSA Leased Vehicles for DOE fleet and fleet fuel economy guide

STRATEGY

1. BIODIESEL USE

- FERMI has HDV fleet
- Assume diesel use remains constant through FY2005
- Assume total conversion to B20 by FY2005

FY2005	FY2005	EQUIV FY2005	FY01	FY02	FY03	FY04	FY05
Diesel (gal)	B20 USE (gal)	FUEL DISPL (GGE)					
31,266	31,876	6,477	6,477	6,477	6,477	6,477	6,477

2. AFV ACQUISITIONS - VIDS

- AFV Refueling access (< 15 miles) = CNG on-site; LPG (private)
- FERMI is in MSA
- Non-AFV acquisition rates assumed same as FY2001; AFV acquisition at 75% EPACT
- LDV turnover assumed to be five years
- Mix of AFV (100% E85): fleet stated do not want to use on-site CNG station; E85 in Illinois
- Avg annual LDV fuel use = 108989/(133-19) = 956 GGE
- FFVs assumed 75% E85 use

	2000		2001		2002		2003		2004		2005	
	Total	AFV	Total	AFV	Total	AFV	Total	AFV	Total	AFV	Total	AFV
LDV	24	24	26	20	26	20	26	20	26	20	26	20
MDV												
HDV												

Total AFVs in Service in FY2005		Total AF Fuel Use in FY 2005 (GGE)	AFV Infra ($)	FY01	FY02	FY03	FY04	FY05
E85 FFV	100	71700	50000					
Total	100	71700		14340	28680	43020	57360	71700

3. Fuel Economy Increases

- Baseline FE is zero since did not buy any non-AFV LDVs in '1999'

	FY01	FY02	FY03	FY04	FY05	
New LDV	6	6	6	6	6	
gal/LDV	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	
New gal used	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	
Gal saved in FY		#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
Gal Saved Cumul						

Total gal saved in FY05 = 0 GGE

4. Fleet Efficiency Improvements

- Reduced vehicle trips
- Increased vehicle loads
- More use of higher FE
- Assume overall two percent reduction in LDV fleet GGE from baseline

Covered Baseline GGE	Assumed 2% Savings (GGE)	FY01	FY02	FY03	FY04	FY05
144,851	2,897	579.40	1,158.81	1,738.21	2,317.62	2,897.02

OVERALL PETROL FUEL REDUCTIONS FOR FERMI STRATEGY

STRATEGY OPTION	FUEL SAVED (GGE)
1	6,477
2	71700
3	0
4	2,897
TOTAL	81,074

IDAHO NAT'L LAB

TOTAL FUEL USE

	1999 (GAL)	GGE	1999 NON-ROAD GAL	GGE	1999 EXEMPT GAL	GGE	TOTAL GGE	2005 GOAL GGE REDUCT
GASOL	397,889	397,889			39558	39558	358,331	
DIESEL	579,235	664,383					664,383	
TOTAL		1,062,272		-		39,558	1,022,714	204,543

FLEET DATA -VIDS

	1999 INVENTORY	NEW TOTAL	NEW AFV	2000 INVENTORY	NEW TOTAL	NEW AFV	2001 INVENTORY	NEW TOTAL	NEW AFV
LDV	698	61	47	698	41	25	700	35	20
MDV	15			15			15		
HDV	249		1	249			249		
AFV	125								

	GASOL	DIESEL	EXEMPT
LDV	573	3	57
MDV		15	(assumed all diesel)
HDV		249	(assumed all diesel)

FLEET FUEL ECONOMY (NEW ACQUISITIONS) - VIDS

Vehicle Type				1999	Fuel Economy Info			
Make	Model	Cylinders	Drive	Acquisitions	City FE	Hwy FE	Combined FE	
Ford	MINICOMPACT			0			26	0
Ford	SUBCOMPACT			0			33	0
	COMPACT				20.3	28.5	23	0
	MIDSIZE				19.7	29	23	0
	LARGE				18	25	21	0
	TWO-SEATER						0	0
	SMALL P/U				16.1	20.2	18	0
	LARGE P/U			8	14.3	19.1	16	0.496173983
	SMALL VAN			3	15.5	20.7	17	0.171669004
	LARGE VAN			1	14.2	19.1	16	0.062292604

Baseline Average FE	16.4
FY2002 FE Goal	17.4
FY2005 FE Goal	19.4

* Average fuel economy values estimated by category based on FY 1999 New GSA Leased Vehicles for DOE fleet and fleet fuel economy guide

STRATEGY

1. BIODIESEL USE

- Idaho has HDV fleet
- Assume diesel use remains constant through FY2005
- Assume total conversion to B20 by FY2005

FY2005 Diesel (Gal)	FY2005 B20 USE (gal)	EQUIV FY2005 FUEL DISPL (GGE)	FY01	FY02	FY03	FY04	FY05
579,235	590,532	119,991	119,991	119,991	119,991	119,991	119,991

2. AFV ACQUISITIONS - VIDS

- AFV Refueling access (< 15 miles) = CNG (govt, private), LPG, Electric
- Idaho not in MSA
- Non-AFV acquisition rate assumed same as FY2001
- AFV acquisition rate assumed 75%
- All acquisitions assumed to be LDV
- LDV turnover assumed to be five years
- Mix of AFVs purchased in FY99 (90% Bi-Fuel CNG; 10% E85)
- Avg annual LDV fuel use = 397889/(698-125) = 694 GGE
- Bi-fuel assumed to use CNG 75% of time; FFVs assumed 75% E85 use

	2000 Total	AFV	2001 Total	AFV	2002 Total	AFV	2003 Total	AFV	2004 Total	AFV	2005 Total	AFV
LDV	41	25	35	26	35	26	35	26	35	26	35	26
MDV												
HDV												

Total AFVs in Service in FY2005		Total AF Fuel Use in FY 2005 (GGE)		AFV Infra ($)	FY01	FY02	FY03	FY04	FY05
CNG bi-fuel	130	67665	0	Existing LCNG station can handle					
E85 FFV	0	0							
Total	130	67665			13533	27066	40599	54132	67665

3. Fuel Economy Increases

- Require gradually increasing FE consistent with FY02 and FY05 goals
  - FY01 = 0.5 mpg increase
  - FY02 = 1.0 mpg increase
  - FY03 = 2.0 mpg increase
  - FY04 =2.5 mpg increase
  - FY05 = 3.0 mpg increase
- Achieve increased FE through better selection of vehicle types, use of hybrids
- LDV turnover assumed to be five years
- Assume average new LDV in 1999 travels 11413 mi/yr based on 694 gal/yr and avg 16.4 mpg

	FY01	FY02	FY03	FY04	FY05
New LDV	9	9	9	9	9
gal/LDV	674	655	619	603	587
New gal used	6065	5891	5572	5425	5285
Gal saved in FY	181	355	674	821	961
Gal Saved Cum	181	535	1210	2031	2992

Total gal saved in FY05 = 2992 GGE

4. Fleet Efficiency Improvements

- Reduced vehicle trips
- Increased vehicle loads
- More use of higher FE
- Assume overall two percent reduction in LDV fleet GGE from baseline

Covered Baseline GGE	Assumed 2% Savings (GGE)	FY01	FY02	FY03	FY04	FY05
1,022,714	20,454	4,090.85	8,181.71	12,272.56	16,363.42	20,454.27

OVERALL PETROL FUEL REDUCTIONS FOR IDAHO STRATEGY

STRATEGY OPTION	FUEL SAVED (GGE)
1	119,991
2	67665
3	2992
4	20,454
TOTAL	211,102

LAWRENCE BERKLEY NAT'L LAB

TOTAL FUEL USE

	1999 (GAL)	GGE	1999 NON-ROAD GAL	GGE	1999 EXEMPT GAL	GGE	TOTAL GGE	2005 GOAL GGE REDUCT
GASOL	68,393	68,393			1098	1098	67,295	
DIESEL	37,741	43,289					43,289	
TOTAL		111,682		-		1,098	110,584	22,117

FLEET DATA -VIDS

	1999 INVENTORY	NEW TOTAL	NEW AFV	2000 INVENTORY	NEW TOTAL	NEW AFV	2001 INVENTORY	NEW TOTAL	NEW AFV
LDV	191	46	2	194	44	22	194	38	20
MDV	56	4	0	56	2	0	56	6	0
HDV	39	0	0	39	1	0	39	2	0
AFV	4								

	GASOL	DIESEL	EXEMPT
LDV	187	0	3
MDV	0	56	
HDV	0	39	

FLEET FUEL ECONOMY (NEW ACQUISITIONS) - GSA Leased Vehicle Data

Vehicle Type Make	Model	Cylinders	Drive	1999 Acquisitions	Fuel Economy Info City FE	Hwy FE	Combined FE
Astro			1	16	18	17	0.059375
Astro			3	16	19	17	0.174177632
Breeze			26	20	28	23	1.132857143
Cargo van			4	15	21	17	0.232380952
Contour			2	22	31	25	0.079032258
Ram 1500			1	16	21	18	0.055803571
Windstar			1	15	23	18	0.056231884

Baseline Average FE	21.23
FY2002 FE Goal	22.23
FY2005 FE Goal	24.23

* Fuel economy values from DOE fleet fuel economy guide

STRATEGY

1. BIODIESEL USE

- Law Berk has MDV & HDV fleet
- Assume diesel use remains constant through FY2005
- Assume total conversion to B20 by FY2005

FY 2005 Diesel (Gal)	FY2005 B20 USE (gal)	EQUIV FY2005 FUEL DISPL (GGE)	FY01	FY02	FY03	FY04	FY05
37,741	38,477	7,818	7,818	7,818	7,818	7,818	7,818

2. AFV ACQUISITIONS - VIDS

- AFV Refueling access (< 15 miles) = CNG (gov't), LPG (private, public)
- Lawrence Berk in MSA
- Non-AFV acquisition rates assumed same as FY2001; AFV acquisition = 75% EPACT
- All acquisitions assumed to be LDV
- LDV turnover assumed to be five years
- Mix of AFVs based on 1999 purchased (33% Bi-Fuel CNG; 33% E85; 33% EV)
- Avg annual LDV fuel use = 68393/187 = 366 GGE
- Bi-fuel assumed to use CNG 75% of time; FFVs assumed 75% E85 use

	2000 Total	AFV	2001 Total	AFV	2002 Total	AFV	2003 Total	AFV	2004 Total	AFV	2005 Total	AFV
LDV	44	22	38	29	38	29	38	29	38	29	38	29
MDV												
HDV												

Total AFVs in Service in FY2005		Total AF Fuel Use in FY 2005 (GGE)	AFV Infra ($)	FY01	FY02	FY03	FY04	FY05
CNG bi-fuel	48	13135	0					
E85 FFV	48	13135	32500					
EV	48	17513	112,000					
Total	96	43783		8756.55	17513.1	26269.65	35026.2	43783

3. Fuel Economy Increases

- Require gradually increasing FE consistent with FY02 and FY05 goals
  - FY01 = 0.5 mpg increase
  - FY02 = 1.0 mpg increase
  - FY03 = 2.0 mpg increase
  - FY04 =2.5 mpg increase
  - FY05 = 3.0 mpg increase
- Achieve increased FE through better selection of vehicle types, use of hybrids
- LDV turnover assumed to be five years
- Assume average new LDV in 1999 travels 7765 mi/yr based on 366 gal/yr and avg 21.2 mpg

	FY01	FY02	FY03	FY04	FY05
New LDV	9	9	9	9	9
gal/LDV	357	349	334	327	320
New gal used	3216	3144	3008	2945	2884
Gal saved in FY	78	150	286	349	410
Gal Saved Cum	78	228	514	863	1273

Total gal saved in FY05 = 1273 GGE

4. Fleet Efficiency Improvements

- Reduced vehicle trips
- Increased vehicle loads
- More use of higher FE
- Assume overall two percent reduction in LDV fleet GGE from baseline

Covered Baseline GGE	Assumed 2% Savings (GGE)	FY01	FY02	FY03	FY04	FY05
110,584	2,212	442.34	884.67	1,327.01	1,769.34	2,211.68

OVERALL PETROL FUEL REDUCTIONS FOR LAWRENCE BERK STRATEGY

STRATEGY OPTION	FUEL SAVED (GGE)
1	7,818
2	43783
3	1273
4	2,212
TOTAL	55,086

LAWRENCE LIV NAT'L LAB

TOTAL FUEL USE

	1999 (GAL)	GGE	1999 NON-ROAD GAL	GGE	1999 EXEMPT GAL	GGE	TOTAL GGE	2005 GOAL GGE REDUCT
GASOL	441,113	441,113	-		39574	39574	401,539	
DIESEL	56,865	65,224	-		3,930	4,508	60,716	
TOTAL		506,337		-		44,082	462,255	92,451

FLEET DATA -VIDS

	1999 INVENTORY	NEW TOTAL	NEW AFV	2000 INVENTORY	NEW TOTAL	NEW AFV	2001 INVENTORY	NEW TOTAL	NEW AFV
LDV	808	98	83	592	118	96	592	110	48
MDV	51	7		51			51		
HDV	54			54			54		
AFV	121								

	GASOL	DIESEL	EXEMPT
LDV	808	0	21
MDV		51	2
HDV		54	7

FLEET FUEL ECONOMY (NEW ACQUISITIONS) - GSA Leased Vehicle Data

Vehicle Type Make	Model	Cylinders	Drive	1999 Acquisitions	Fuel Economy Info City FE	Hwy FE	Combined FE	
Ford	astro			4	16	19	17	0.232236842
	breeze			6	20	28	23	0.261428571
	crown vic			2	18	25	21	0.097111111
	D1500			1	17	22	19	0.052807487
	Durango			2	15	20	17	0.118333333
	F250			9	13	18	15	0.605769231
	Lumina			2	20	30	24	0.085
	Ram 1500			1	16	21	18	0.055803571
	Ranger			1	18	23	20	0.050120773
	Tahoe			4	15	19	17	0.241403509
	Taurus			1	19	27	22	0.045614035
						Baseline Average FE		17.9
						FY2002 FE Goal		18.9
						FY2005 FE Goal		20.9

* Fuel economy values from DOE fleet fuel economy guide

STRATEGY

1. BIODIESEL USE

- Assume diesel use remains constant through FY2005
- Assume total conversion to B20 by FY2005

FY2005 Diesel (gal)	FY2005 B20 USE (gal)	EQUIV FY2005 FUEL DISPL (GGE)	FY01	FY02	FY03	FY04	FY05
56,865	57,974	11,780		5,890	11,780	20,615	20,615

2. AFV ACQUISITIONS - VIDS

- AFV Refueling access (< 15 miles) = CNG (gov't), LPG (private, public)
- Lawrence in MSA
- Non-AFV acquisition rates assumed same as FY2001; AFV acquisition = 75% EPACT
- All acquisitions assumed to be LDV
- LDV turnover assumed to be five years
- Mix of AFVs based on 1999 purchased (90% Bi-Fuel CNG; 10% E85)
- Avg annual LDV fuel use = 441113/(808+21) = 532 GGE
- Bi-fuel assumed to use CNG 75% of time; FFVs assumed 75% E85 use

	2000 Total	AFV	2001 Total	AFV	2002 Total	AFV	2003 Total	AFV	2004 Total	AFV	2005 Total	AFV
LDV	118	96	110	83	110	83	110	83	110	83	110	83
MDV												
HDV												

Total AFVs in Service in FY2005		Total AF Use (GGE) in FY05	AFV Refueling Infra ($)		FY01	FY02	FY03	FY04	FY05
CNG bi-fuel	374	149027	$850,000	Quote from Fleet Mgr; but funded under AFV User					
E85 FFV	42	16559	$50,000	Estimated					
Total	415	165585	$900,000		33117	66234	99351	132468	165585

3. Fuel Economy Increases

- Require gradually increasing FE consistent with FY02 and FY05 goals
  - FY01 = 0.5 mpg increase
  - FY02 = 1.0 mpg increase
  - FY03 = 2.0 mpg increase
  - FY04 =2.5 mpg increase
  - FY05 = 3.0 mpg increase
- Achieve increased FE through better selection of vehicle types, use of hybrids
- LDV turnover assumed to be five years
- Assume average new LDV in 1999 travels 9,514 mi/yr based on 532 gal/yr and avg 17.9 mpg

	FY01	FY02	FY03	FY04	FY05
New LDV	27	27	27	27	27
gal/LDV	518	504	479	467	456
New gal used	13976	13606	12921	12604	12303
Gal saved in FY	388	758	1443	1760	2061
Gal Saved Cum	388	1146	2589	4349	6410

Total gal saved in FY05 = 6410 GGE

4. Fleet Efficiency Improvements

- Reduced vehicle trips
- Increased vehicle loads
- More use of higher FE
- Assume overall two percent reduction in LDV fleet GGE from baseline

Covered Baseline GGE	Assumed 2% Savings (GGE)	FY01	FY02	FY03	FY04	FY05
462,255	9,245	1,849.02	3,698.04	5,547.07	7,396.09	9,245.11

OVERALL PETROL FUEL REDUCTIONS FOR LAWRENCE LIV STRATEGY

STRATEGY OPTION	FUEL SAVED (GGE)
1	11,780
2	165585
3	6410
4	9,245
TOTAL	193,020

LOS ALAMOS NAT'L LAB

TOTAL FUEL USE

	1999 (GAL)	GGE	1999 NON-ROAD GAL	GGE	1999 EXEMPT GAL	GGE	TOTAL GGE	2005 GOAL GGE REDUCT
GASOL	529,205	529,205			209803	209803	319,402	
DIESEL	158,709	182,039			59,780	68,568	113,472	
TOTAL		711,244		-		278,371	432,874	86,575

FLEET DATA -VIDS

	1999 INVENTORY	NEW TOTAL	NEW AFV	2000 INVENTORY	NEW TOTAL	NEW AFV	2001 INVENTORY	NEW TOTAL	NEW AFV
LDV	591	122	83	833	75	62	833	75	62
MDV	468	47	0	530	60	0	530	60	0
HDV	101	2	0	115	5	0	115	5	0
AFV	244								

	GASOL	DIESEL	EXEMPT
LDV	591	0	263
MDV	438	30	
HDV	0	101	

FLEET FUEL ECONOMY (NEW ACQUISITIONS) - GSA Leased Vehicle Data

Vehicle Type Make	Model	Cylinders	Drive	1999 Acquisitions	Fuel Economy Info City FE	Hwy FE	Combined FE	
	1500 Cargo			1	13	18	15	0.067307692
	astro			3	16	19	17	0.174177632
	breeze			3	20	28	23	0.130714286
	cherokee			14	16	20	18	0.79625
	D150			1	14	19	16	0.062969925
	Dakota			3	15	20	17	0.1775
	Durango			45	15	20	17	2.6625
	Expedition			11	11	20	14	0.7975
	F250			7	13	18	15	0.471153846
	S10			3	17	21	19	0.161344538
	Tahoe			13	15	19	17	0.784561404

Baseline Average FE	16.5
FY2002 FE Goal	17.5
FY2005 FE Goal	19.5

* Fuel economy values from DOE fleet fuel economy guide

STRATEGY

1. BIODIESEL USE
   - LANL has HDV fleet
   - Assume diesel use remains constant through FY2005
   - Assume total conversion to B20 by FY2005

Fy2005 Diesel (gal)	FY2005 B20 USE (gal)	EQUIV FY2005 FUEL DISPL (GGE)	FY01	FY02	FY03	FY04	FY05
158,709	161,804	32,877	32,877	32,877	32,877	32,877	32,877

2. AFV ACQUISITIONS - VIDS
   - AFV Refueling access (< 15 miles) = CNG (on-site), Electric (onsite); LPG (private, utility)
   - LANL in MSA and Albuquerque is AFV User City
   - Non-AFV acquisition rates assumed same as FY2001; AFV acquisition = 75% EPACT
   - All acquisitions assumed to be LDV
   - LDV turnover assumed to be five years
   - Mix of AFVs based on 1999 purchased (100% E85)
   - Avg annual LDV fuel use = 310 GGE based on fleet ops data
   - FFVs assumed 75% E85 use

	2000 Total	AFV	2001 Total	AFV	2002 Total	AFV	2003 Total	AFV	2004 Total	AFV	2005 Total	AFV
LDV	75	62	75	62	75	62	75	62	75	62	75	62
MDV												
HDV												

Total AFVs in Service in FY2005		Total AF Use (GGE) in FY05	AFV Refueling Infra ($)	FY01	FY02	FY03	FY04	FY05
E85 FFV	310	72075	50000					
Total	310	72075		14415	28830	43245	57660	72075

3. Fuel Economy Increases
   - Require gradually increasing FE consistent with FY02 and FY05 goals
     - FY01 = 0.5 mpg increase
     - FY02 = 1.0 mpg increase
     - FY03 = 2.0 mpg increase
     - FY04 =2.5 mpg increase
     - FY05 = 3.0 mpg increase
   - Achieve increased FE through better selection of vehicle types, use of hybrids
   - LDV turnover assumed to be five years
   - Assume average new LDV in 1999 travels 5115 mi/yr based on 310 gal/yr and avg 16.5 mpg

	FY01	FY02	FY03	FY04	FY05
New LDV	13	13	13	13	13
gal/LDV	300	292	276	269	262
New gal used	3901	3790	3586	3492	3402
Gal saved in FY	129	240	444	538	628
Gal Saved Cum	129	369	813	1352	1979

Total gal saved in FY05 = 1979 GGE

4. Fleet Efficiency Improvements
   - Reduced vehicle trips
   - Increased vehicle loads
   - More use of higher FE
   - Assume overall two percent reduction in LDV fleet GGE from baseline

Covered Baseline GGE	Assumed 2% Savings (GGE)	FY01	FY02	FY03	FY04	FY05
432,874	8,657	1,731.49	3,462.99	5,194.48	6,925.98	8,657.47

OVERALL PETROL FUEL REDUCTIONS FOR LOS ALAMOS STRATEGY

STRATEGY OPTION	FUEL SAVED (GGE)
1	32,877
2	72075
3	1979
4	8,657
TOTAL	115,589

NETL MORGANTOWN

TOTAL FUEL USE

	1999 (GAL)	GGE	1999 NON-ROAD GAL	GGE	1999 EXEMPT GAL	GGE	TOTAL GGE	2005 GOAL GGE REDUCT
GASOL	4,635	4,635			309	309	4,326	
DIESEL	132	151			-	-	151	
TOTAL		4,786		-		309	4,477	895

FLEET DATA -VIDS

	1999 INVENTORY	NEW TOTAL	NEW AFV	2000 INVENTORY	NEW TOTAL	NEW AFV	2001 INVENTORY	NEW TOTAL	NEW AFV
LDV	15			16	7	3	16	7	3
MDV	4			4	1	0	4	1	0
HDV	1			1	0	0	1	0	0
AFV	4								

	GASOL	DIESEL	EXEMPT	
LDV	11	0	1	(Per vehicle fuel consumption assumed same as NETL-Pitt = 309 Gas; 132 diesel)
MDV	4	0	0	
HDV	0	1		

FLEET FUEL ECONOMY (NEW ACQUISITIONS) - FAST Vehicle Data (2000)

Vehicle Type Make	Model	Cylinders	Drive	1999 Acquisitions	Fuel Economy Info City FE	Hwy FE	Combined FE	
	Van			1	13	18	15	0.067307692
				0	16	19	17	0
Compact Sedan				3	20	28	23	0.130714286
				0	16	20	18	0
				0	14	19	16	0
				0	15	20	17	0
				0	15	20	17	0
				0	11	20	14	0
				0	13	18	15	0
				0	17	21	19	0
				0	15	19	17	0

Baseline Average FE	20.2
FY2002 FE Goal	21.2
FY2005 FE Goal	23.2

* Fuel economy values from DOE fleet fuel economy guide

STRATEGY

1. BIODIESEL USE
   - NETL PITT has HDV fleet
   - Assume diesel use remains constant through FY2005
   - Assume total conversion to B20 by FY2005

Fy2005 Diesel (gal)	FY2005 B20 USE (gal)	EQUIV FY2005 FUEL DISPL (GGE)	FY01	FY02	FY03	FY04	FY05
132	135	27	27	27	27	27	27

2. AFV ACQUISITIONS - VIDS
   - AFV Refueling access (< 15 miles) = CNG (on-site slow fill)
   - Vehicle acquisition rates assumed to be 5/yr: AFV acquisition = 75% EPACT
   - All acquisitions assumed to be LDV
   - LDV turnover assumed to be three years
   - Mix of AFVs based on 1999 purchased (100% CNG per fleet mgr)
   - Avg annual LDV fuel use = 309 GGE based on FAST input for NETL-Pitt DOE-owned vehicles in FY2000
   - FFVs assumed 75% CNG use

	2000 Total	AFV	2001 Total	AFV	2002 Total	AFV	2003 Total	AFV	2004 Total	AFV	2005 Total	AFV
LDV			5	4	5	4	5	4	5	4	5	4
MDV												
HDV												

Total AFVs in Service in FY2005		Total AF Use (GGE) in FY05	AFV Refueling Infra ($)	FY01	FY02	FY03	FY04	FY05
CNG	12	2781	125000					
Total	12	2781		556.2	1112.4	1668.6	2224.8	2781

3. Fuel Economy Increases
   - Require gradually increasing FE consistent with FY02 and FY05 goals
     - FY01 = 0.5 mpg increase
     - FY02 = 1.0 mpg increase
     - FY03 = 2.0 mpg increase
     - FY04 =2.5 mpg increase
     - FY05 = 3.0 mpg increase
   - Achieve increased FE through better selection of vehicle types, use of hybrids
   - LDV turnover assumed to be five years
   - Assume average new LDV in 1999 travels 6242 mi/yr based on 309 gal/yr and avg 20.2 mpg

	FY01	FY02	FY03	FY04	FY05
New LDV	1	1	1	1	1
gal/LDV	302	294	281	275	269
New gal used	302	294	281	275	269
Gal saved in FY	7	15	28	34	40
Gal Saved Cum	7	22	50	84	124

Total gal saved in FY05 = 124 GGE

4. Fleet Efficiency Improvements
   - Reduced vehicle trips
   - Increased vehicle loads
   - More use of higher FE
   - Assume overall two percent reduction in LDV fleet GGE from baseline

Covered Baseline GGE	Assumed 2% Savings (GGE)	FY01	FY02	FY03	FY04	FY05
4,477	90	18	36	54	72	90

OVERALL PETROL FUEL REDUCTIONS FOR LOS ALAMOS STRATEGY

STRATEGY OPTION	FUEL SAVED (GGE)
1	27
2	2781
3	124
4	90
TOTAL	3,022

NETL PITTSBURGH

TOTAL FUEL USE

	1999 (GAL)	GGE	1999 NON-ROAD GAL	GGE	1999 EXEMPT GAL	GGE	TOTAL GGE	2005 GOAL GGE REDUCT
GASOL	10,815	10,815			1,545	1545	9,270	
DIESEL	528	606			-	-	606	
TOTAL		11,421		-		1,545	9,876	1,975

FLEET DATA -VIDS

	1999 INVENTORY	NEW TOTAL	NEW AFV	2000 INVENTORY	NEW TOTAL	NEW AFV	2001 INVENTORY	NEW TOTAL	NEW AFV
LDV	42			39	5	2	39	5	2
MDV	7			5	1	0	5	1	0
HDV	4			5	0	0	5	0	0
AFV	14								

	GASOL	DIESEL	EXEMPT
LDV	28	0	4
MDV	7	0	1
HDV	0	4	

FLEET FUEL ECONOMY (NEW ACQUISITIONS) - FAST Vehicle Data (2000)

Vehicle Type Make	Model	Cylinders	Drive	1999 Acquisitions	Fuel Economy Info City FE	Hwy FE	Combined FE	
				0	13	18	15	0
				0	16	19	17	0
Compact Sedan				2	20	28	23	0.087142857
				0	16	20	18	0
				0	14	19	16	0
				0	15	20	17	0
				0	15	20	17	0
SUV				1	11	20	14	0.0725
				0	13	18	15	0
				0	17	21	19	0
				0	15	19	17	0

Baseline Average FE	18.8
FY2002 FE Goal	19.8
FY2005 FE Goal	21.8

* Fuel economy values from DOE fleet fuel economy guide

STRATEGY

1. BIODIESEL USE
   - NETL PITT has HDV fleet
   - Assume diesel use remains constant through FY2005
   - Assume total conversion to B20 by FY2005

Fy2005 Diesel (gal)	FY2005 B20 USE (gal)	EQUIV FY2005 FUEL DISPL (GGE)	FY01	FY02	FY03	FY04	FY05
528	538	109	109	109	109	109	109

2. AFV ACQUISITIONS - VIDS
   - AFV Refueling access (< 15 miles) = CNG (on-site slow fill)
   - Non-AFV acquisition rates assumed same as FY2001; AFV acquisition = 75% EPACT
   - All acquisitions assumed to be LDV
   - LDV turnover assumed to be five years
   - Mix of AFVs based on 1999 purchased (100% CNG per fleet mgr)
   - Avg annual LDV fuel use = 309 GGE based on FAST input for DOE-owned vehicles in FY2000
   - FFVs assumed 75% CNG use

	2000 Total	AFV	2001 Total	AFV	2002 Total	AFV	2003 Total	AFV	2004 Total	AFV	2005 Total	AFV
LDV	5	4	5	4	5	4	5	4	5	4	5	4
MDV												
HDV												

Total AFVs in Service in FY2005		Total AF Use (GGE) in FY05	AFV Refueling Infra ($)	FY01	FY02	FY03	FY04	FY05
CNG	20	4635	125000					
Total	20	4635		927	1854	2781	3708	4635

3. Fuel Economy Increases
   - Require gradually increasing FE consistent with FY02 and FY05 goals
     - FY01 = 0.5 mpg increase
     - FY02 = 1.0 mpg increase
     - FY03 = 2.0 mpg increase
     - FY04 =2.5 mpg increase
     - FY05 = 3.0 mpg increase
   - Achieve increased FE through better selection of vehicle types, use of hybrids
   - LDV turnover assumed to be five years
   - Assume average new LDV in 1999 travels 5807 mi/yr based on 309 gal/yr and avg 18.8 mpg

	FY01	FY02	FY03	FY04	FY05
New LDV	1	1	1	1	1
gal/LDV	301	293	279	273	266
New gal used	301	293	279	273	266
Gal saved in FY	8	16	30	36	43
Gal Saved Cum	8	24	53	90	132

Total gal saved in FY05 = 132 GGE

4. Fleet Efficiency Improvements
   - Reduced vehicle trips
   - Increased vehicle loads
   - More use of higher FE
   - Assume overall two percent reduction in LDV fleet GGE from baseline

Covered Baseline GGE	Assumed 2% Savings (GGE)	FY01	FY02	FY03	FY04	FY05
9,876	198	40	79	119	158	198

OVERALL PETROL FUEL REDUCTIONS FOR LOS ALAMOS STRATEGY

STRATEGY OPTION	FUEL SAVED (GGE)
1	109
2	4635
3	132
4	198
TOTAL	5,074

NEVADA TEST SITE

TOTAL FUEL USE - Fleet Sources

	1999 (GAL)	GGE	1999 NON-ROAD GAL	GGE	1999 EXEMPT GAL	GGE	TOTAL GGE	2005 GOAL GGE REDUCT
GASOL	1,127,100	1,127,100			12348	12348	1,114,752	
DIESEL	507,280	581,850	355,096	407,295		-	174,555	
TOTAL		1,708,950		407,295		12,348	1,289,307	257,861

FLEET DATA -VIDS

	1999 INVENTORY	NEW TOTAL	NEW AFV	2000 INVENTORY	NEW TOTAL	NEW AFV	2001 INVENTORY	NEW TOTAL	NEW AFV
LDV	1040	100	20	981	232	91	880	100	20
MDV	170	0	0	169	0	0	0	0	0
HDV	257	0	0	256	1	0	200	0	0
AFV	111								

	GASOL	DIESEL	EXEMPT
LDV	657	0	9
MDV	105	2	
HDV	48	210	

FLEET FUEL ECONOMY (NEW ACQUISITIONS) - GSA Leased Vehicle Data

Vehicle Type Make	Model	Cylinders	Drive	1999 Acquisitions	Fuel Economy Info City FE	Hwy FE	Combined FE	
Plymouth	Breeze			5	20	28	23	0.217857143
Dodge	Caravan			1	16	20	18	0.056875
Jeep	Cherokee			26	16	20	18	1.47875
Ford	Contour			1	22	31	25	0.039516129
Dodge	Dakota			3	16	21	18	0.167410714
Dodge	Dakota			8	14	18	16	0.514285714
Ford	E150			2	14	17	15	0.131512605
Ford	Expedition			10	11	20	14	0.725
Ford	F250			4	13	18	15	0.269230769
Dodge	Ram 1500			5	16	21	18	0.279017857
Ford	Ranger			1	18	23	20	0.050120773
Chevy	Tahoe			4	15	19	17	0.241403509
Ford	Windstar			3	15	23	18	0.168695652

Baseline Average FE	16.82
FY2002 FE Goal	17.82
FY2005 FE Goal	19.82

* Fuel economy values from DOE fleet fuel economy guide

STRATEGY

1. BIODIESEL USE

- Assume diesel use remains constant through FY2005
- Assume total conversion to B20 by FY2005

FY2005 Diesel (gal)	FY2005 B20 USE (gal)	EQUIV FY2005 FUEL DISPL (GGE)	FY01	FY02	FY03	FY04	FY05
507,280	517,173	105,085	105,085	105,085	105,085	105,085	105,085

2. AFV ACQUISITIONS - VIDS

- AFV Refueling access (< 15 miles) = CNG (onsite)
- Nevada Test Site is in the Las Vegas MSA according to the 1995 Census
- Non-AFV acquisition rates assumed same as FY2001
- AFV acquisition rates assumed to be 75% for FY 2001 thru Fy 2005
- LDV turnover assumed to be five years
- Mix of AFVs (80% CNG; 20% E85)
- According to fleet sources, 80% of gasoline is consumed by LDV
- Avg annual LDV fuel use = (1,127,100*0.8)/657 = 1372 GGE
- Bi-fuel assumed to use CNG 75% of time; FFVs assumed 75% E85 use

	2000 Total	AFV	2001 Total	AFV	2002 Total	AFV	2003 Total	AFV	2004 Total	AFV	2005 Total	AFV
LDV	232	91	100	75	100	75	100	75	100	75	100	75
MDV												
HDV												

Total AFVs in Service in FY2005		Total AF Use in FY 2005 (GGE)	AFV Refueling Infra	FY01	FY02	FY03	FY04	FY05
CNG bi-fuel	300	308700	479660	Existing CNG station serves 100 AFVs; still need more CNG for extra 300 veh				
E85 FFV	75	77175	50000					
Total	375	385875		77175	154350	231525	308700	385875

3. Fuel Economy Increases

- Require gradually increasing FE consistent with FY02 and FY05 goals
  - FY01 = 0.5 mpg increase
  - FY02 = 1.0 mpg increase
  - FY03 = 2.0 mpg increase
  - FY04 =2.5 mpg increase
  - FY05 = 3.0 mpg increase
- Achieve increased FE through better selection of vehicle types, use of hybrids
- LDV turnover assumed to be five years
- Assume average new LDV in 1999 travels 23086 mi/yr based on 1372 gal/yr and avg 16.82 mpg

	FY01	FY02	FY03	FY04	FY05
New LDV	25	25	25	25	25
gal/LDV	1333	1295	1227	1195	1165
New gal used	33320	32385	30664	29871	29117
Gal saved in FY		980	1915	3636	4429	5183
Gal Saved Cum		980	2895	6531	10960	16143

Total gal saved in FY05 = 16143 GGE

4. Fleet Efficiency Improvements

- Reduced vehicle trips
- Increased vehicle loads
- More use of higher FE
- Assume overall two percent reduction in LDV fleet GGE from baseline

Covered Baseline GGE	Assumed 2% Savings (GGE)	FY01	FY02	FY03	FY04	FY05
1,289,307	25,786	5,157.23	10,314.46	15,471.68	20,628.91	25,786.14

OVERALL PETROL FUEL REDUCTIONS FOR NEVADA TEST SITE STRATEGY

STRATEGY OPTION	FUEL SAVED (GGE)
1	105,085
2	385875
3	16143
4	25,786
TOTAL	532889

NREL

TOTAL FUEL USE

	1999		1999 NON-ROAD			1999 EXEMPT		2005 GOAL
	(GAL)	GGE	GAL	GGE	GAL	GGE	TOTAL GGE	GGE REDUCT
GASOL	16,100	16,100			1464	1464	14,636	
DIESEL	720	826					826	
TOTAL		16,926		-		1,464	15,462	3,092

FLEET DATA -VIDS

	1999			2000			2001		
	INVENTORY	NEW TOTAL	NEW AFV	INVENTORY	NEW TOTAL	NEW AFV	INVENTORY	NEW TOTAL	NEW AFV
LDV	36	9	8	36	6	5	37	9	9
MDV	12	1							
HDV									
Afv	14								

	GASOL	DIESEL	EXEMPT
LDV	22		2
MDV	0	12	(assume all diesel)
HDV	0	0	

FLEET FUEL ECONOMY (NEW ACQUISITIONS) - VIDS

Vehicle Type				1999	Fuel Economy Info			
Make	Model	Cylinders	Drive	Acquisitions	City FE	Hwy FE	Combined FE	
Ford	MINICOMPACT			0			26	0
Ford	SUBCOMPACT			0			33	0
	COMPACT			0	20.3	28.5	23	0
	MIDSIZE			0	19.7	29	23	0
	LARGE			0	18	25	21	0
	TWO-SEATER			0			0	0
	SMALL P/U			0	16.1	20.2	18	0
	LARGE P/U			0	14.3	19.1	16	0
	SMALL VAN			0	15.5	20.7	17	0
	LARGE VAN			0	14.2	19.1	16	0

Baseline Average FE	-
FY2002 FE Goal	#VALUE!
FY2005 FE Goal	#VALUE!

* Average fuel economy values estimated by category based on FY 1999 New GSA Leased Vehicles for DOE fleet and fleet fuel economy guide

STRATEGY

1. BIODIESEL USE

- NREL has HDV fleet
- Assume diesel use remains constant through FY2005
- Assume total conversion to B20 by FY2005

FY2005	FY2005	EQUIV FY2005	FY01	FY02	FY03	FY04	FY05
Diesel (gal)	B20 USE (gal)	FUEL DISPL (GGE)					
720	734	149	149	149	149	149	149

2. AFV ACQUISITIONS - VIDS

- AFV Refueling access (< 15 miles) = CNG (public); LPG (public); E85 (public)
- NREL is in MSA
- Non-AFV acquisition rates assumed same as FY2001; AFV acquisition at 75% EPACT
- LDV turnover assumed to be five years
- Mix of AFVs (50% CNG; 30% Electric; 20% E85) based on Fy 1999 purchased
- Avg annual LDV fuel use = 16100/22 = 732 GGE
- CNG Bi-Fuel and FFVs assumed 75% E85 use

	2000		2001		2002		2003		2004		2005	
	Total	AFV	Total	AFV	Total	AFV	Total	AFV	Total	AFV	Total	AFV
LDV	6	5	9	7	9	7	9	7	9	7	9	7
MDV												
HDV												

Total AFVs in Service in FY2005		Total AF Fuel Use (GGE) in FY2005	FY01	FY02	FY03	FY04	FY05
CNG Bi-Fuel	18	9608					
Electric	11	7686					
E85 FFV	7	3843					
Total	25	13451	2690.1	5380.2	8070.3	10760.4	13451

3. Fuel Economy Increases

- Require gradually increasing FE consistent with FY02 and FY05 goals
  - FY01 = 0.5 mpg increase
  - FY02 = 1.0 mpg increase
  - FY03 = 2.0 mpg increase
  - FY04 =2.5 mpg increase
  - FY05 = 3.0 mpg increase
- Achieve increased FE through better selection of vehicle types, use of hybrids
- LDV turnover assumed to be five years
- Assume average new LDV in 1999 travels 6751 mi/yr based on 348 gal/yr and avg 19.4 mpg

	FY01	FY02	FY03	FY04	FY05	
New LDV	2	2	2	2	2	
gal/LDV	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	
New gal used	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	
Gal saved in FY		#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
Gal Saved Cum		#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!

Total gal saved in FY05 = 0 GGE

4. Fleet Efficiency Improvements

- Reduced vehicle trips
- Increased vehicle loads
- More use of higher FE
- Assume overall two percent reduction in LDV fleet GGE from baseline

Covered Baseline GGE	Assumed 2% Savings (GGE)	FY01	FY02	FY03	FY04	FY05
15,462	309	61.85	123.69	185.54	247.39	309.24

OVERALL PETROL FUEL REDUCTIONS FOR FERMI STRATEGY

STRATEGY OPTION	FUEL SAVED (GGE)
1	149
2	13451
3	0
4	309
TOTAL	13,909

OAK RIDGE NAT'L LAB

TOTAL FUEL USE

	1999 (GAL)	GGE	1999 NON-ROAD GAL	GGE	1999 EXEMPT GAL	GGE	TOTAL GGE	2005 GOAL GGE REDUCT
GASOL		495,145		192,534		0	302,611	
DIESEL		171,987		54,305			117,682	
TOTAL		667,132		246,839		-	420,293	84,059

FLEET DATA -VIDS

	1999 INVENTORY	NEW TOTAL	NEW AFV	2000 INVENTORY	NEW TOTAL	NEW AFV	2001 INVENTORY	NEW TOTAL	NEW AFV
LDV	1741	39	17	1569	19	13	1514	30	12
MDV	220								
HDV	216								
AFV	14								

	GASOL	DIESEL	EXEMPT	
LDV	1741	0	187	
MDV		220	7	(assume all diesel)
HDV		216	22	(assume all diesel)

FLEET FUEL ECONOMY (NEW ACQUISITIONS) - VIDS

Vehicle Type Make	Model	Cylinders	Drive	1999 Acquisitions	Fuel Economy Info City FE	Hwy FE	Combined FE	
Ford	MINICOMPACT			0			26	0
Ford	SUBCOMPACT			0			33	0
	COMPACT			3	20.3	28.5	23	0.128649209
	MIDSIZE				19.7	29	23	0
	LARGE				18	25	21	0
	TWO-SEATER						0	0
	SMALL P/U			6	16.1	20.2	18	0.33863231
	LARGE P/U			13	14.3	19.1	16	0.806282723
	SMALL VAN				15.5	20.7	17	0
	LARGE VAN				14.2	19.1	16	0

Baseline Average FE	17.3
FY2002 FE Goal	18.3
FY2005 FE Goal	20.3

* Average fuel economy values estimated by category based on FY 1999 New GSA Leased Vehicles for DOE fleet and fleet fuel economy guide

STRATEGY

1. BIODIESEL USE

- Assume diesel use remains constant through FY2005
- Assume total conversion to B20 by FY2005

FY2005 Diesel (gal)	FY2005 B20 USE (gal)	EQUIV FY2005 FUEL DISPL (GGE)	FY01	FY02	FY03	FY04	FY05
153,560	156,555	31,811	31,811	31,811	31,811	31,811	31,811

2. AFV ACQUISITIONS - VIDS

- AFV Refueling access (< 20 miles) = CNG (govt), LPG (private)
- Oak Ridge in MSA
- Non-AFV acquisition rates assumed same as FY2001; AFV acquisition = 75% EPACT
- All acquisitions assumed to be LDV
- LDV turnover assumed to be five years
- Mix of AFVs based on 1999 purchased (100% E85)
- Avg annual LDV fuel use = 302611/1741 = 174 GGE
- FFVs assumed 75% E85 use

	2000 Total	AFV	2001 Total	AFV	2002 Total	AFV	2003 Total	AFV	2004 Total	AFV	2005 Total	AFV
LDV	19	13	30	23	30	23	30	23	30	23	30	23
MDV												
HDV												

Total AFVs in Service in FY2005	Total AF Fuel Use (GGE) in FY 2005	AFV Infra ($)	FY01	FY02	FY03	FY04	FY05
E85 FFV	115	15008	35000				
Total	115	15008		3001.5	6003	9004.5	12006	15008

AFV Refueling Infra	$	
Biodiesel	0	
E85	255000	(Two sites)

3. Fuel Economy Increases

- Require gradually increasing FE consistent with FY02 and FY05 goals
  - FY01 = 0.5 mpg increase
  - FY02 = 1.0 mpg increase
  - FY03 = 2.0 mpg increase
  - FY04 =2.5 mpg increase
  - FY05 = 3.0 mpg increase
- Achieve increased FE through better selection of vehicle types, use of hybrids
- LDV turnover assumed to be five years
- Assume average new LDV in 1999 travels 3010 mi/yr based on 174 gal/yr and avg 17.3 mpg

	FY01	FY02	FY03	FY04	FY05
New LDV	7	7	7	7	7
gal/LDV	169	165	156	152	148
New gal used	1185	1153	1093	1066	1039
Gal saved in FY	33	65	125	152	179
Gal Saved Cum	33	98	222	375	554

Total gal saved in FY05 = 554 GGE

4. Fleet Efficiency Improvements

- Reduced vehicle trips
- Increased vehicle loads
- More use of higher FE
- Assume overall two percent reduction in LDV fleet GGE from baseline

Covered Baseline GGE	Assumed 10% Savings (GGE)	FY01	FY02	FY03	FY04	FY05
420,293	42,029	8,405.86	16,811.72	25,217.58	33,623.44	42,029.30

OVERALL PETROL FUEL REDUCTIONS FOR OAK RIDGE STRATEGY

STRATEGY OPTION	FUEL SAVED (GGE)
1	31,811
2	15008
3	554
4	42,029
TOTAL	89,401

PANTEX

TOTAL FUEL USE

	1999		1999 NON-ROAD		1999 EXEMPT			2005 GOAL
	(GAL)	GGE	GAL	GGE	GAL	GGE	TOTAL GGE	GGE REDUCT
GASOL	209,716	209,716			0	0	209,716	
DIESEL	97,344	111,654					111,654	
TOTAL		321,370		77,128		-	244,242	48,848

FLEET DATA -VIDS

	1999			2000			2001		
	INVENTORY	NEW TOTAL	NEW AFV	INVENTORY	NEW TOTAL	NEW AFV	INVENTORY	NEW TOTAL	NEW AFV
LDV	271	50	50	287	38	12	294	35	35
MDV	7	0	0	7	0	0	7	0	0
HDV	16	5	0	16	0	0	16	0	0
AFV	63								
	GASOL	DIESEL	EXEMPT						
LDV	208	3	0						
MDV	0	7							
HDV	0	16							

FLEET FUEL ECONOMY (NEW ACQUISITIONS) - GSA Leased Vehicle Data

Vehicle Type				1999	Fuel Economy Info		
Make	Model	Cylinders	Drive	Acquisitions	City FE	Hwy FE	Combined FE
1500	1		5	13	18	15	0.336538462
1500	1			14	18	16	0
Countour	5		1	22	31	25	0.039516129
Crown Vic	1			18	25	21	0
Ram 1500	3		11	16	21	18	0.613839286
Tahoe	29		19	15	19	17	1.146666667

Baseline Average FE	16.8
FY2002 FE Goal	17.8
FY2005 FE Goal	19.8

* Fuel economy values from DOE fleet fuel economy guide

STRATEGY

1. BIODIESEL USE
   - Pantex has HDV fleet
   - Assume diesel use remains constant through FY2005
   - Assume total conversion to B20 by FY2005

Fy2005	FY2005	EQUIV FY2005	FY01	FY02	FY03	FY04	FY05
Diesel (gal)	B20 USE (gal)	FUEL DISPL (GGE)					
97,344	99,243	20,165	20,165	20,165	20,165	20,165	20,165

2. AFV ACQUISITIONS - VIDS
   - AFV Refueling access (< 15 miles) = CNG (onsite); biodiesel (onsite)
   - Pantex not in MSA
   - Non-AFV acquisition rates assumed same as FY2001
   - Afv acquisition rate assumed 75%
   - All acquisitions assumed to be LDV
   - LDV turnover assumed to be five years
   - Problems with onsite CNG station; want to phase it out
   - Mix of AFVs based on 1999 purchased (100% E85)
   - Avg annual LDV fuel use = 209716/208 = 1008 GGE
   - FFVs assumed 75% E85 use

	2000		2001		2002		2003		2004		2005	
	Total	AFV	Total	AFV	Total	AFV	Total	AFV	Total	AFV	Total	AFV
LDV	38	12	35	26	35	26	35	26	35	26	35	26
MDV												
HDV												

Total AFVs in Service in FY2005	Total AF Fuel Use (GGE) in FY2005	AFV Infra ($)	FY01	FY02	FY03	FY04	FY05
E85 FFV 130	98280	50000					
Total 130	98280		19656	39312	58968	78624	98280

3. Fuel Economy Increases
   - Require gradually increasing FE consistent with FY02 and FY05 goals
     - FY01 = 0.5 mpg increase
     - FY02 = 1.0 mpg increase
     - FY03 = 2.0 mpg increase
     - FY04 =2.5 mpg increase
     - FY05 = 3.0 mpg increase
   - Achieve increased FE through better selection of vehicle types, use of hybrids
   - LDV turnover assumed to be five years
   - Assume average new LDV in 1999 travels 16934 mi/yr based on 1008 gal/yr and avg 16.8 mpg

	FY01	FY02	FY03	FY04	FY05	
New LDV	9	9	9	9	9	
gal/LDV	976	949	898	875	853	
New gal used	8784	8538	8085	7876	7678	
Gal saved in FY		288	534	987	1196	1394
Gal Saved Cum		288	821	1808	3003	4397

Total gal saved in FY05 = 4397 GGE

4. Fleet Efficiency Improvements
   - Reduced vehicle trips
   - Increased vehicle loads
   - More use of higher FE
   - Assume overall two percent reduction in LDV fleet GGE from baseline

Covered Baseline GGE	Assumed 2% Savings (GGE)	FY01	FY02	FY03	FY04	FY05
244,242	4,885	976.97	1,953.93	2,930.90	3,907.87	4,884.83

OVERALL PETROL FUEL REDUCTIONS FOR PANTEX STRATEGY

STRATEGY OPTION	FUEL SAVED (GGE)
1	20,165
2	98280
3	4397
4	4,885
TOTAL	127,727

RICHLAND-HANFORD

TOTAL FUEL USE

	1999 (GAL)	GGE	1999 NON-ROAD GAL	GGE	1999 EXEMPT GAL	GGE	TOTAL GGE	2005 GOAL GGE REDUCT
GASOL	499,704	499,704			37873	37873	461,831	
DIESEL	114,719	131,582					131,582	
TOTAL		631,286		-		37,873	593,413	118,683

FLEET DATA -VIDS

	1999 INVENTORY	NEW TOTAL	NEW AFV	2000 INVENTORY	NEW TOTAL	NEW AFV	2001 INVENTORY	NEW TOTAL	NEW AFV
LDV	551	7	7	820	10	10	820	7	7
MDV									
HDV	823								
AFV	84								

	GASOL	DIESEL	EXEMPT
LDV	551	0	92
MDV	0		
HDV	663	160	Estimated

FLEET FUEL ECONOMY (NEW ACQUISITIONS) - GSA Leased Vehicle Data

Vehicle Type Make	Model	Cylinders	Drive	1999 Acquisitions	Fuel Economy Info City FE	Hwy FE	Combined FE
astro			1	15	19	17	0.060350877
cherokee			7	16	20	18	0.398125
durango			2	15	20	17	0.118333333
F250			8	13	18	15	0.538461538
S10			1	17	21	19	0.053781513
Tahoe			12	15	19	17	0.724210526
Windstar			1	15	23	18	0.056231884

Baseline Average FE	16.4
FY2002 FE Goal	17.4
FY2005 FE Goal	19.4

* Fuel economy values from DOE fleet fuel economy guide

STRATEGY

1. BIODIESEL USE

- Richland has MDV & HDV fleet
- Assume diesel use remains constant through FY2005
- Assume total conversion to B20 by FY2005

Fy2005 Diesel (gal)	FY2005 B20 USE (gal)	EQUIV FY2005 FUEL DISPL (GGE)	FY01	FY02	FY03	FY04	FY05
117,484	119,775	24,337	24,337	24,337	24,337	24,337	24,337

2. AFV ACQUISITIONS - VIDS

- AFV Refueling access (< 15 miles) = LPG (private)
- Richland not in MSA
- Non-AFV acquisition assumed same as FY2001
- Afv acquisition assumed 75%
- All acquisitions assumed to be LDV
- LDV turnover assumed to be five years
- Mix of AFVs based on 1999 purchased (100% E85)
- Avg annual LDV fuel use = 502801/(551+663) = 414 GGE
- FFVs assumed 75% E85 use

	2000 Total	AFV	2001 Total	AFV	2002 Total	AFV	2003 Total	AFV	2004 Total	AFV	2005 Total	AFV
LDV	7	7	10	8	10	8	10	8	10	8	10	8
MDV												
HDV												

Total AFVs in Service in FY2005	Total AF Fuel Use (GGE) in FY2005	Afv Infra ($)	FY01	FY02	FY03	FY04	FY05
E85 FFV	40	12420	35000					
Total	40	12420		2484	4968	7452	9936	12420

3. Fuel Economy Increases

- Require gradually increasing FE consistent with FY02 and FY05 goals
  - FY01 = 0.5 mpg increase
  - FY02 = 1.0 mpg increase
  - FY03 = 2.0 mpg increase
  - FY04 =2.5 mpg increase
  - FY05 = 3.0 mpg increase
- Achieve increased FE through better selection of vehicle types, use of hybrids
- LDV turnover assumed to be five years
- Assume average new LDV in 1999 travels 6790 mi/yr based on 414 gal/yr and avg 16.4 mpg

	FY01	FY02	FY03	FY04	FY05
New LDV	2	2	2	2	2
gal/LDV	401	390	369	359	350
New gal used	803	780	737	718	699
Gal saved in FY	25	48	91	110	129
Gal Saved Cum	25	73	164	274	402

Total gal saved in FY05 = 402 GGE

4. Fleet Efficiency Improvements

- Reduced vehicle trips
- Increased vehicle loads
- More use of higher FE
- Assume overall 15 percent reduction in covered fleet GGE

Covered Baseline GGE	Assumed 15% Savings (GGE)	FY01	FY02	FY03	FY04	FY05
593,413	89,011.94	17,802.39	35,604.77	53,407.16	71,209.55	89,011.94

OVERALL PETROL FUEL REDUCTIONS FOR RICHLAND-HANFORD STRATEGY

STRATEGY OPTION	FUEL SAVED (GGE)
1	24,337
2	12420
3	402
4	89,012
TOTAL	126,172

SNL-KIRTLAND

TOTAL FUEL USE

	1999		1999 NON-ROAD		1999 EXEMPT			2005 GOAL
	(GAL)	GGE	GAL	GGE	GAL	GGE	TOTAL GGE	GGE REDUCT
GASOL		266,912			18,000	18,000	248,912	
DIESEL	55,003	63,088					63,088	
TOTAL		330,000		-		18,000	312,000	62,400

FLEET DATA -VIDS

	1999			2000			2001		
	INVENTORY	NEW TOTAL	NEW AFV	INVENTORY	NEW TOTAL	NEW AFV	INVENTORY	NEW TOTAL	NEW AFV
LDV	413	52	11	414	124	68	414	43	7
MDV	320	31		320	26		320		
HDV	30	14		30	4		30		
AFV	84								
	GASOL	DIESEL	EXEMPT			VIDS-Gasol			
LDV	386	27	24			0.935368043			
MDV		320	(assume all diesel)						
HDV	0	30							

FLEET FUEL ECONOMY (NEW ACQUISITIONS) - GSA Leased Vehicle Data

Vehicle Type				1999	Fuel Economy Info		
Make	Model	Cylinders	Drive	Acquisitions	City FE	Hwy FE	Combined FE
1500			1	13	18	15	0.067307692
1500			2	14	18	16	0.128571429
cherokee			2	16	20	18	0.11375
Contour			2	20	28	23	0.087142857
durango			2	15	20	17	0.118333333
F250			5	13	18	15	0.336538462
Ram 1500			2	16	21	18	0.111607143
suburban			2	14	16	15	0.134821429
tahoe			12	15	19	17	0.724210526
Windstar			1	15	23	18	0.056231884

Baseline Average FE	16.5
FY2002 FE Goal	17.5
FY2005 FE Goal	19.5

* Fuel economy values from DOE fleet fuel economy guide

STRATEGY

1. BIODIESEL USE
   - Assume diesel use remains constant through FY2005
   - Assume total conversion to B20 by FY2005

Fy2005	FY2005	EQUIV FY2005	FY01	FY02	FY03	FY04	FY05
Diesel (gal)	B20 USE (gal)	FUEL DISPL (GGE)					
55,003	56,075	11,394	11,394	11,394	11,394	11,394	11,394

2. AFV ACQUISITIONS - VIDS
   - AFV Refueling access (< 15 miles) = CNG (govt), LPG (private, utility), E85 (public)
   - SNL in MSA and Albuquerque is AFV User City
   - Non-AFV acquisition rates assumed same as FY2001
   - AFV acquisition rates assumed 75% since AFV User City with 50% incremental cost paid
   - All acquisitions assumed to be LDV
   - LDV turnover assumed to be five years
   - Mix of AFVs (50% CNG; 50% E85)
   - Avg annual LDV fuel use = 228753/386 = 593 GGE
   - Bi-fuel assumed to use CNG 75% of time; FFVs assumed 75% E85 use

	2000		2001		2002		2003		2004		2005	
	Total	AFV	Total	AFV	Total	AFV	Total	AFV	Total	AFV	Total	AFV
LDV	124	68	43	32	43	32	43	32	43	32	43	32
MDV												
HDV												

				AFV Infra					
Total AFVs in Service in FY2005	Total AF Fuel Use (GGE) in FY2005			($)	FY01	FY02	FY03	FY04	FY05
CNG bi-fuel	80	35580		New CNG station already funded					
E85 FFV	80	35580		0					
Total	160	71160			14232	28464	42696	56928	71160

3. Fuel Economy Increases
   - Require gradually increasing FE consistent with FY02 and FY05 goals
     - FY01 = 0.5 mpg increase
     - FY02 = 1.0 mpg increase
     - FY03 = 2.0 mpg increase
     - FY04 =2.5 mpg increase
     - FY05 = 3.0 mpg increase
   - Achieve increased FE through better selection of vehicle types, use of hybrids
   - LDV turnover assumed to be five years
   - Assume average new LDV in 1999 travels 9780 mi/yr based on 593 gal/yr and avg 16.5 mpg

	FY01	FY02	FY03	FY04	FY05
New LDV	11	11	11	11	11
gal/LDV	575	559	529	515	501
New gal used	6327	6147	5814	5661	5516
Gal saved in FY	196	376	709	862	1007
Gal Saved Cum	196	572	1281	2142	3149

Total gal saved in FY05 = 3149 GGE

4. Fleet Efficiency Improvements
   - Reduced vehicle trips
   - Increased vehicle loads
   - More use of higher FE
   - Assume overall two percent reduction in LDV fleet GGE from baseline

Covered	Assumed 2%	FY01	FY02	FY03	FY04	FY05
Baseline GGE	Savings (GGE)					
312,000	6,240	1,248	2,496	3,744	4,992	6,240

OVERALL PETROL FUEL REDUCTIONS FOR SNL-KIRTLAND STRATEGY

STRATEGY OPTION	FUEL SAVED (GGE)
1	11,394
2	71,160
3	3,149
4	6,240
TOTAL	91,943

SAVANNAH RIVER

TOTAL FUEL USE

	1999		1999 NON-ROAD		1999 EXEMPT		2005 GOAL
	(GAL)	GGE	GAL	GGE	GAL	GGE	Covered GGE	GGE REDUCT
GASOL	330,000	330,000			9174	9174	320,826	
DIESEL	333,000	381,951	293,000	336,071		-	45,880	
TOTAL		711,951		336,071		9,174	366,706	73,341

FLEET DATA -Fleet data

	1999			2000			2001		
	INVENTORY	NEW TOTAL	NEW AFV	INVENTORY	NEW TOTAL	NEW AFV	INVENTORY	NEW TOTAL	NEW AFV
LDV	1472	210	169	1472	151	114	1472	206	101
MDV		48	0		96	0		93	0
HDV	87	2	0	87	3	0	87	3	0
AFV	284								

	GASOL	DIESEL	EXEMPT	Data
LDV	1188	0	33	Inventory #'s - from fleet
MDV				acquisition #'s - from VIDS
HDV		87		

FLEET FUEL ECONOMY (NEW ACQUISITIONS) - GSA Leased Vehicle Data

Vehicle Type				1999	Fuel Economy Info			
Make	Model	Cylinders	Drive	Acquisitions	City FE	Hwy FE	Combined FE	
				0	0	0	0	0
				0			0	0
				0			0	0
				0			0	0
Ford	Windstar			4	15	23	18	0.224927536
Jeep	Cherokee			4	16	20	18	0.2275
Ford	F-250			9	13	18	15	0.605769231
Dodge	Dakota			4	16	21	18	0.223214286
Dodge	Ram 1500			8	16	21	18	0.446428571
Chevy	Suburban			16	14	16	15	1.078571429

Baseline Average FE	16.03
FY2002 FE Goal	17.03
FY2005 FE Goal	19.03

* Fuel economy values from DOE fleet fuel economy guide

STRATEGY

1. BIODIESEL USE

- Assume diesel use remains constant through FY2005
- Assume total conversion to B20 by FY2005

FY 2005	FY2005	EQUIV FY2005	FY01	FY02	FY03	FY04	FY05
Diesel (gal)	B20 USE (gal)	FUEL DISPL (GGE)					
333,000	339,494	68,982	68,982	68,982	68,982	68,982	68,982

2. AFV ACQUISITIONS - VIDS

- AFV Refueling access (< 15 miles) = E85 (onsite); biodiesel (onsite); LPG (private)
- Savannah not in MSA
- Non-AFV acquisition rates assumed same as FY2001
- AFV aqusiition rate assumed to be 75% for FY 2001 -2005
- All acquisitions assumed to be LDV
- LDV turnover assumed to be five years
- Mix of AFVs based on 1999 purchased (100% E85) and current use of 61,000 E85
- Avg annual LDV fuel use = (330,000)/1188 = 278 GGE
- FFVs assumed 75% E85 use

	2000		2001		2002		2003		2004		2005	
	Total	AFV	Total	AFV	Total	AFV	Total	AFV	Total	AFV	Total	AFV
LDV	151	114	206	155	206	155	206	155	206	155	206	155
MDV												
HDV												

		Total AF Fuel Use	AFV					
Total AFVs in Service in FY2005		in FY 2005 (GGE)	Refueling Infra	FY01	FY02	FY03	FY04	FY05
E85 FFV	775	161588	None needed; use existing on-site					
Total	775	161588		32317.5	64635	96952.5	129270	161588

3. Fuel Economy Increases

- Require gradually increasing FE consistent with FY02 and FY05 goals
  - FY01 = 0.5 mpg increase
  - FY02 = 1.0 mpg increase
  - FY03 = 2.0 mpg increase
  - FY04 =2.5 mpg increase
  - FY05 = 3.0 mpg increase
- Achieve increased FE through better selection of vehicle types, use of hybrids
- LDV turnover assumed to be five years
- Assume average new LDV in 1999 travels 4456 mi/yr based on 278 gal/yr and avg 16.03 mpg

	FY01	FY02	FY03	FY04	FY05
New LDV	51	51	51	51	51
gal/LDV	269	262	247	240	234
New gal used	13744	13341	12601	12261	11939
Gal saved in FY	434	837	1577	1917	2239
Gal Saved Cum	434	1271	2848	4765	7004

Total gal saved in FY05 = 7004 GGE

4. Fleet Efficiency Improvements

- Reduced vehicle trips
- Increased vehicle loads
- More use of higher FE
- Assume overall two percent reduction in LDV fleet GGE from baseline

Covered	Assumed 2%	FY01	FY02	FY03	FY04	FY05
Baseline GGE	Savings (GGE)					
366,706	7,334	1,466.82	2,933.65	4,400.47	5,867.30	7,334.12

OVERALL PETROL FUEL REDUCTIONS FOR SAVANNAH STRATEGY

STRATEGY OPTION	FUEL SAVED (GGE)
1	68,982
2	161588
3	7004
4	7,334
TOTAL	244,908